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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MAY 1971



NATIONAL SPACE SCIENCE DATA CENTER

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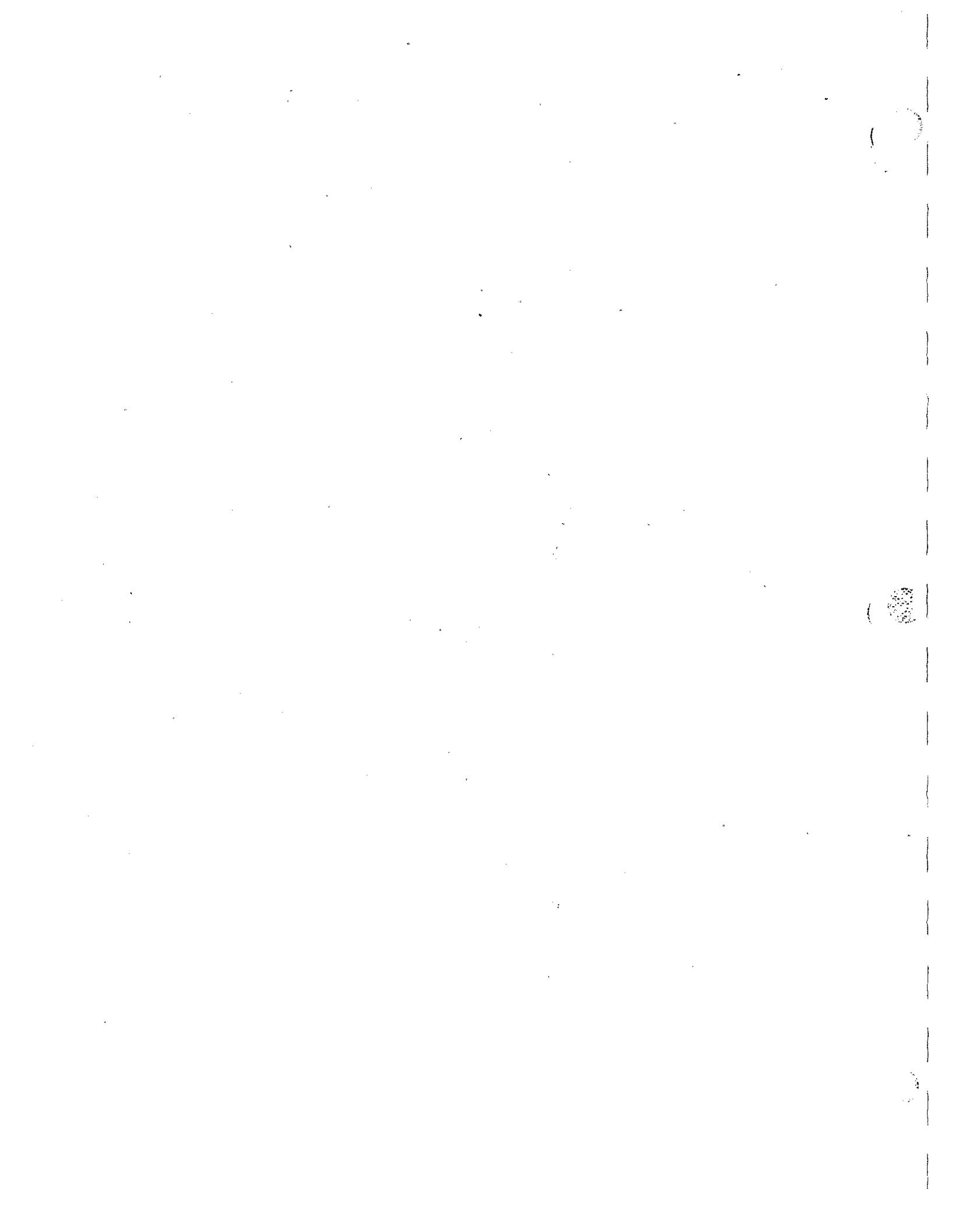
NSSDC 71-13

LUNAR ORBITER
PHOTOGRAPHIC SUPPORTING DATA

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May 1971

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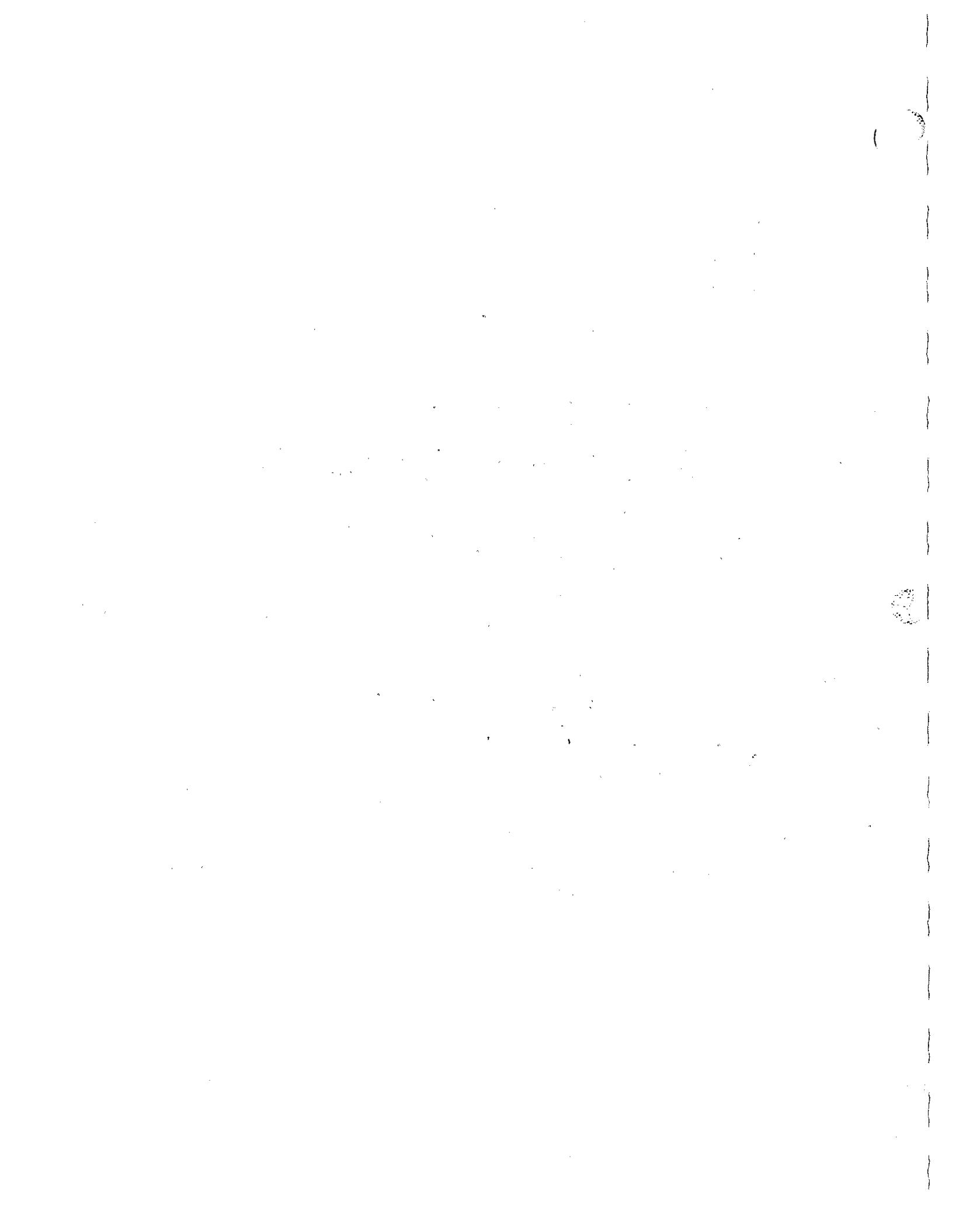
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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

INTRODUCTION

This document contains photographic supporting data for Lunar Orbiters 1 through 5. These data, which were compiled by the National Space Science Data Center (NSSDC), are necessary for the interpretation and analysis of high- and medium-resolution Lunar Orbiter photographs. This document describes and presents the NSSDC Lunar Orbiter Photographic Supporting Data printouts. Definitions of the elements of the data base and the search capabilities of the NSSDC system used to produce these and other printouts are also included.

PHOTOGRAPHIC SUPPORTING DATA

The NSSDC data file for Lunar Orbiter photographic supporting data was compiled from the latest revised and corrected version of photographic support data provided by The Boeing Company under contract to NASA/Manned Spacecraft Center. This version contains revisions to the Lunar Orbiter supporting data prepared by The Boeing Company in 1969 (References 1 to 5).

The photographic supporting data are accurate only to the extent that the input data are error free and that assumptions made in the computations are valid; the Boeing data are the latest version of Lunar Orbiter photographic parameters. Revisions to the original data were based on the most recent error analysis and definitions of the lunar model and planetary ephemerides. Descriptions of the recognized sources of error can be found in "Lunar Orbiter Photographic Data" (Reference 6).

The items selected from the Boeing data for inclusion in the NSSDC data output are those thought to have the broadest application to most users of the Lunar Orbiter photographic data. Information included by Boeing but not extracted by NSSDC is shown in Table 1.

The NSSDC Full List Ordered by Mission and Frame Numbers (Appendix A) contains photographic supporting data for a related pair of high- and medium-resolution frames. A sample of the data, as they appear in this printout, is shown in Figure 1. Definitions of the items (column headings) contained in each entry are given in Table 2. Figures 2 and 3 show the geometry of the items listed as they relate to photograph exposure and camera film.

Two alternate output listings from the data base of the NSSDC supporting data are included as Appendix B and Appendix C. The list of position parameters ordered by mission and frame number (Appendix B) shows the corner coordinates of high- and medium-resolution frames. The list of illumination parameters ordered by mission and frame number (Appendix C) includes selected illumination data.

LOGICAL SEARCH CAPABILITY

A logical search capability of the data base created for the NSSDC supporting data has been developed for filling specific requests. The allowable search terms are given in Table 3. Each term can be combined in any logical relationship with any other term. For numeric fields, the relationships of 'greater than,' 'less than,' or 'between' are valid in the search terms.

U.S. scientists should address inquiries or requests concerning the logical search to:

National Space Science Data Center
Goddard Space Flight Center
Code 601.4
Greenbelt, Maryland 20771

Telephone: (301) 982-6695

All requests from scientists outside the United States are handled by the World Data Center A for Rockets and Satellites. Inquiries should be addressed to:

World Data Center A for Rockets and Satellites
Goddard Space Flight Center
Code 601
Greenbelt, Maryland 20771 U.S.A.

Additional information concerning the projected capabilities of the NSSDC photographic supporting data file can be found in "An Information Retrieval System for Photographic Data" (Reference 7).

Table 1
Boeing Items Not Included in NSSDC Data File

Actual Photo Length, millimeters	Image Motion Compensation (V/H), radians/second
Actual Photo Width, millimeters	
Arc Length to Target, Longitude and Latitude	Longitude and Latitude of Mission Design Point Target
Camera Axis Clock Angle	Magnitude of Camera Axis (Spacecraft to Surface)
Camera Axis Cone Angle	Maneuver Angles
Canopus Declination	Maneuver Axes Indicators
Canopus Right Ascension	Moon's Local Radius
Canopus Sensor Clock Angle	Orbit
Canopus Sensor Cone Angle	Resolution Constant, meters
Data Distance Between Point of Origin (Principal Point of Autocollimation) of Input Coordinate System and Center Point of Picture, millimeters	Resolution Constant, meters/kilometers
Direction Cosines of Camera Axis	Scale Factor, meters/kilometers
Direction Cosines to Target	Side Angular Field of View
Distance to Target, Longitude and Latitude	Spacecraft Radius
Ephemeris Time, Universal Time Conversion	Spacecraft State ($x, y, z, \dot{x}, \dot{y}, \dot{z}$), Selenocentric (1950.0) and Selenographic
Film Platen Clock Angle	Sun Angle at Nadir
Film Platen Cone Angle	Sun Arc at Nadir
Focal Length, millimeters	Sun Elevation at Principal Ground Point
Forward Angular Field of View	Sun Sensor Clock Angle
Forward Overlap Ratio, percent	Sun Sensor Cone Angle
High- and Low-Resolution Notch Points	Time Between Photos
Horizontal Velocity	Time from Periapsis
	True Anomaly

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA.

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

PAGE 1

MISSION/
FRAME NO.1005
YR. MO. DY
HR. MI. SEC

TIME

660E18

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 218.30 KM	TILT ANG 5.36 DEG	SUN AZIM 89.15 DEG	LATITUDE 1.88 DEG
ALT RT -0.0804 KM/SEC	TILT AZIM 292.07 DEG	INCID ANG 68.41 DEG	LONGITUDE 84.00 DEG
LAT 1.63 DEG	SWING ANG 99.27 DEG	EMISS ANG 6.03 DEG	
LONG 84.62 DEG	N.DEV. 347.33 DEG	PHASE ANG 62.88 DEG	
		ALPHA .5.51 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.17 DEG	AB 175.0 KM
A LONG 67.05 DEG	BC 153.7 KM
B LAT -1.46 DEG	CD 188.6 KM
B LONG 85.74 DEG	DA 156.0 KM
C LAT -0.55 DEG	TILT DISTANCE 7.4
C LONG 80.75 DEG	
D LAT 5.54 DEG	
D LONG 82.07 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.08 DEG	AB 78.8 KM
A LONG 84.61 DEG	BC 19.9 KM
B LAT 0.54 DEG	CD 79.5 KM
B LONG 84.03 DEG	DA 20.1 KM
C LAT 0.68 DEG	TILT DISTANCE 57.0
C LONG 83.39 DEG	
D LAT 3.24 DEG	
D LONG 83.96 DEG	

MISSION/
FRAME NO.1006
YR. MO. DY
HR. MI. SEC

TIME

660E18

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 217.53 KM	TILT ANG 4.84 DEG	SUN AZIM 89.11 DEG	LATITUDE 1.76 DEG
ALT RT -0.0767 KM/SEC	TILT AZIM 293.16 DEG	INCID ANG 67.84 DEG	LONGITUDE 84.57 DEG
LAT 1.52 DEG	SWING ANG 100.35 DEG	EMISS ANG 5.45 DEG	
LONG 85.13 DEG	N.DEV. 347.30 DEG	PHASE ANG 62.88 DEG	
		ALPHA 4.94 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.04 DEG	AB 174.9 KM
A LONG 67.53 DEG	BC 152.6 KM
B LAT -1.58 DEG	CD 187.0 KM
B LONG 86.31 DEG	DA 155.0 KM
C LAT -C.65 DEG	TILT DISTANCE 6.7
C LONG 81.35 DEG	
D LAT 5.38 DEG	
D LONG 82.67 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT 2.95 DEG	AB 78.5 KM
A LONG 85.18 DEG	BC 19.8 KM
B LAT 0.42 DEG	CD 79.1 KM
B LONG 84.60 DEG	DA 19.9 KM
C LAT 0.56 DEG	TILT DISTANCE 51.5
C LONG 83.96 DEG	
D LAT 3.11 DEG	
D LONG 84.54 DEG	

Figure 1 - Sample of Full List Ordered by Mission and Frame Number

Table 2
Definition of Items in Lunar Orbiter Supporting Data

<u>Frame Identification</u>		<u>Photo Illumination</u>	
MISSION/ FRAME NO.	A four-digit number given in upper left-hand corner, e.g., 1005. First digit (1) is Lunar Orbiter mission number. The next three digits (005) give frame number. Thus, 1005 is frame number 5 from the Lunar Orbiter 1 mission.	SUN AZIM	Sun Azimuth at Principal Ground Point - Azimuth of sun's rays at camera axis intersection, measured clockwise from north.
<u>Time</u>		INCID ANG	Incidence Angle - Angle between surface normal and sun's rays.
YR,MO,DY	Year, Month, and Day of exposure given as a six-digit number in universal time (UT).	EMISS ANG	Emission Angle - Angle between surface normal and camera axis. Also, angle between photo image plane and subject plane.
HR,MI,SEC	Hour, Minute, and Second of exposure given as an eight-digit number in UT. Hundreths of a second follow the decimal point.	PHASE ANG	Phase Angle - Angle between camera axis and sun's rays.
<u>S/C (Spacecraft) Position</u>		ALPHA	Alpha - Angle that is the projection of surface normal into phase angle plane. This angle represents tilt of surface toward or away from sun.
ALT	Spacecraft Altitude - Altitude of spacecraft above lunar surface.	<u>Principal Point</u>	
ALT RT	Mean Altitude Rate - Rate of change of altitude with respect to time.	LATITUDE	Latitude and Longitude of Principal Ground Point
LAT, LONG	Latitude and Longitude of Nadir Point - Selenographic latitude (longitude) of point on lunar surface directly below spacecraft.	LONGITUDE	- Intersection of camera axis with lunar surface.
<u>S/C (Spacecraft) Orientation</u>		<u>Medium and High Resolution</u>	
TILT ANG	Tilt Angle - Angle between camera axis and spacecraft nadir line.	CORNER CO- ORDINATES	Corner Coordinates - Frame corners identified as A, B, C, and D. Read clockwise starting at A, the upper right corner.
TILT AZIM	Tilt Azimuth - Azimuth of principal ground point from spacecraft nadir.	SIDE LENGTH	Side Length - The distance between corner points.
SWING ANG	Swing Angle - Angle between cross-axis of film frame (the Y-axis) and line from center of frame to image of nadir point. Measured positive clockwise from positive Y-axis.	TIILT DISTANCE	Tilt Distance - Distance from image of the camera axis intersect to image of nadir point measured on spacecraft film. Given for both high- and medium-resolution frames. Computed at the scale of the spacecraft film.
N. DEV.	North Deviation Angle - Deviation of north from cross-frame (cross) film axis (Y-axis) measured clockwise.		

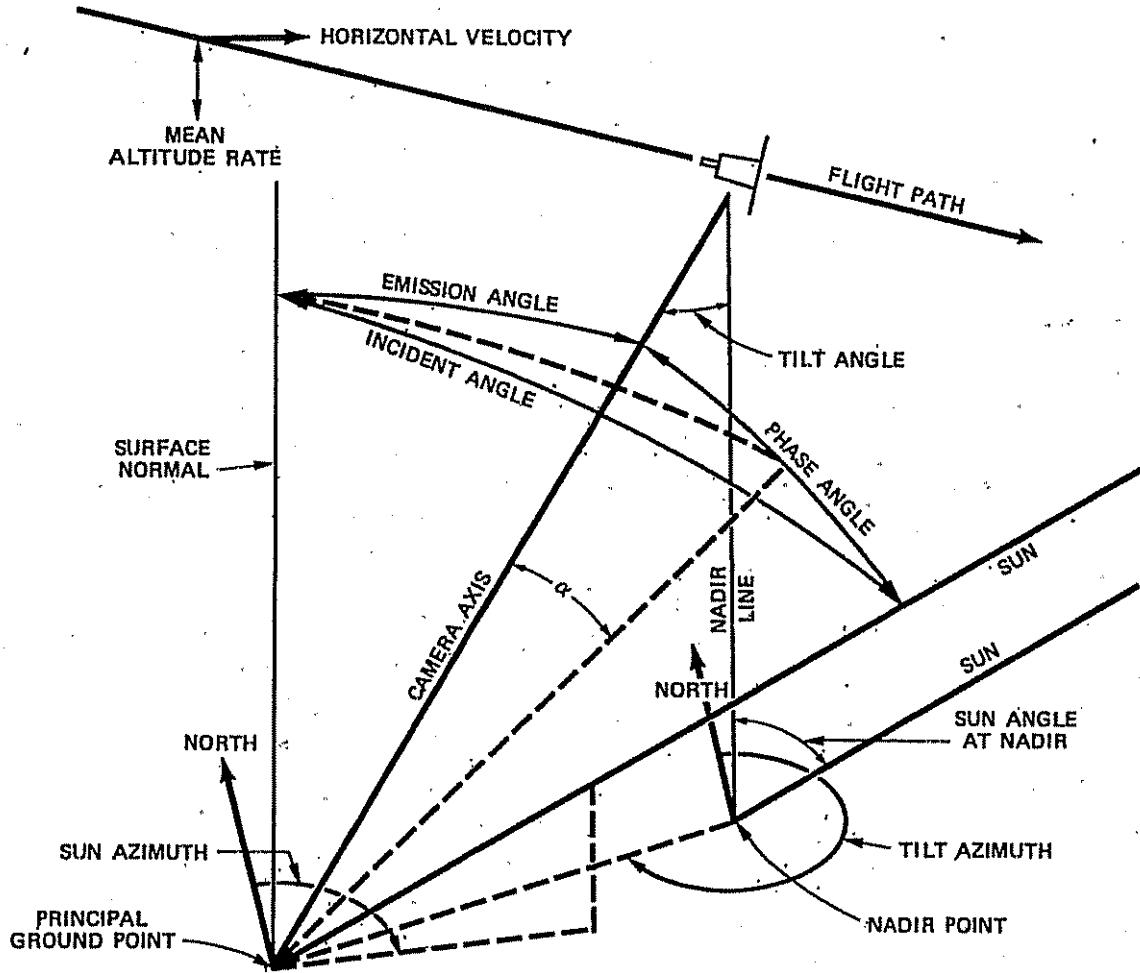


Figure 2 - Geometry of Photographic Parameters

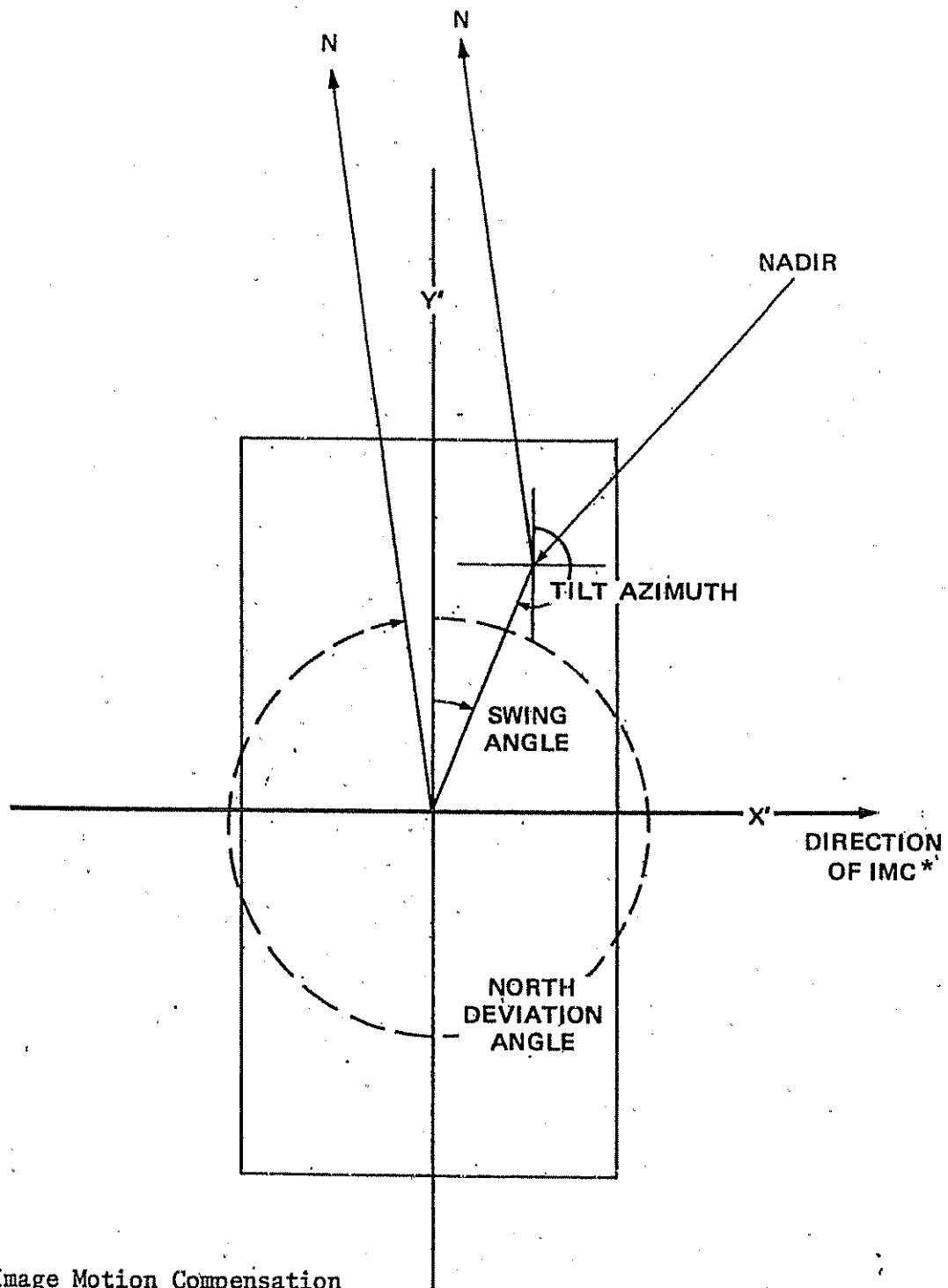


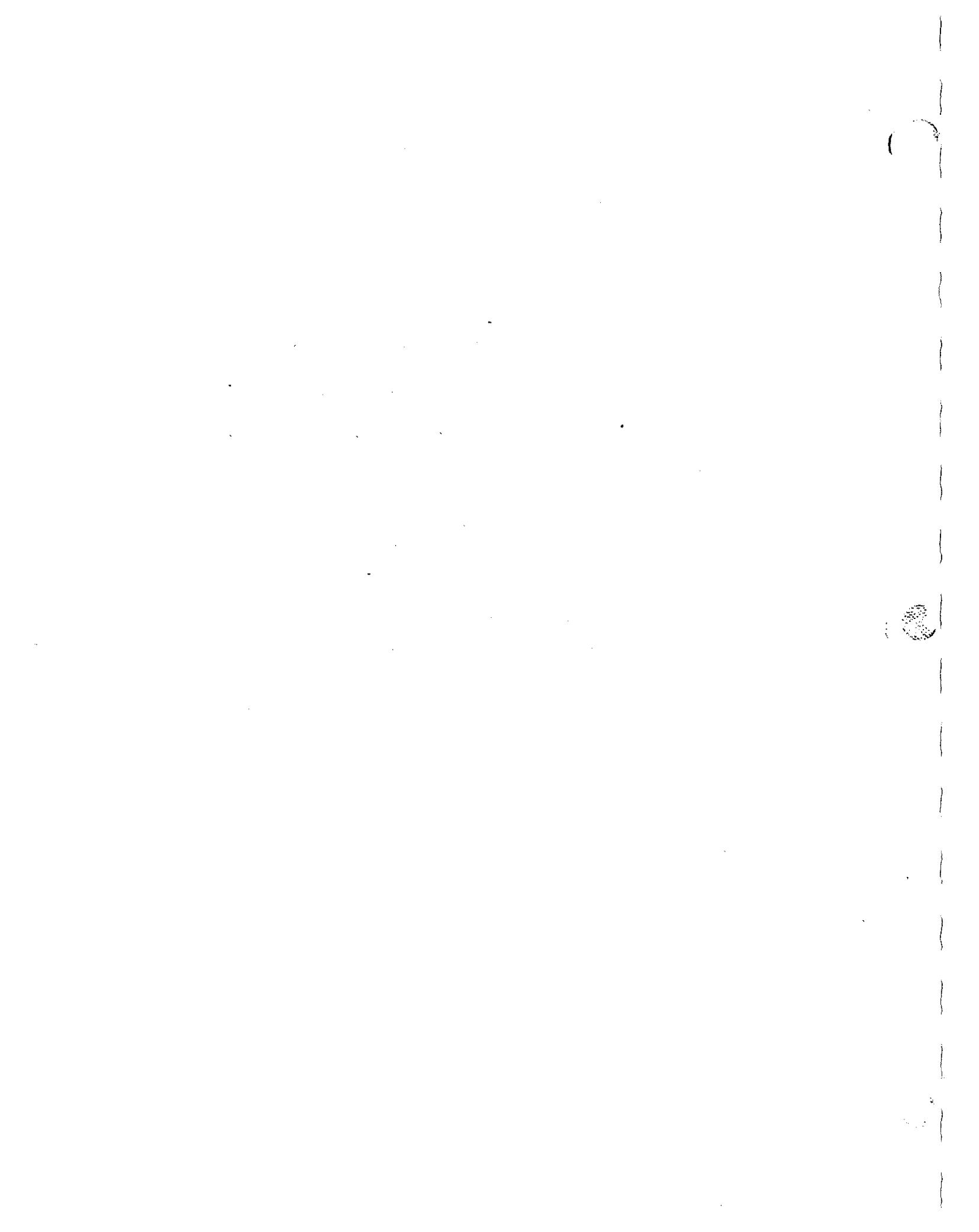
Figure 3 - Camera Film Geometry

Table 3
Data Base Search Terms

<u>Mnemonic</u>	<u>Definition</u>
ALT	Spacecraft Altitude
BOUND	Latitude and Longitude of Corner Points Describing a Quadrangular Boundary
EMISAN	Emission Angle
INCDAN	Incident Angle
PHASAN	Phase Angle
POINT	Latitude and Longitude of a Point Which Must Be Included in a Photograph
PPLAT	Principal Point Latitude
PPLONG	Principal Point Longitude
RES	Resolution (High and/or Medium)
SCLAT	Spacecraft Latitude
SCLONG	Spacecraft Longitude
SUNAZ	Sun Azimuth
TILTAN	Spacecraft Tilt Angle
TILTAZ	Spacecraft Tilt Azimuth

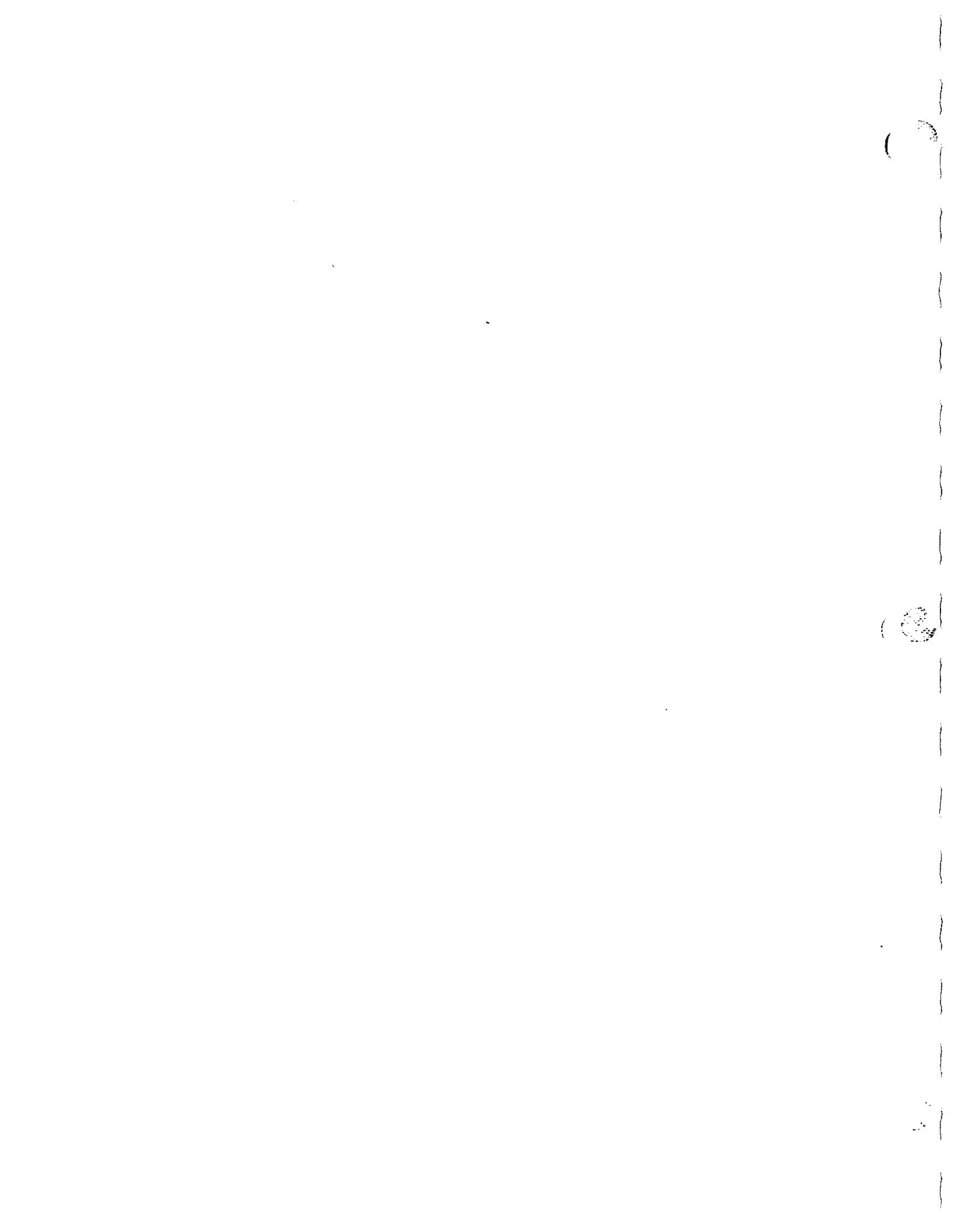
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3. Moyers, W. G., "Lunar Orbiter Improved Photo Support Data Lunar Orbiter III," The Boeing Company, D2-100815-3, NASA CR-66735-3.
4. Moyers, W. G., "Lunar Orbiter Improved Photo Support Data Lunar Orbiter IV," The Boeing Company, D2-100815-4, NASA CR-66735-4.
5. Moyers, W. G., "Lunar Orbiter Improved Photo Support Data Lunar Orbiter V," The Boeing Company, D2-100815-5, NASA CR-66735-5.
6. Beeler, M., and K. Michlovitz, "Lunar Orbiter Photographic Data," NASA-GSFC, NSSDC 69-05, June 1969.
7. Blum, B. I., "An Information Retrieval System for Photographic Data," NASA-GSFC, NSSDC 69-09, September 1969.



APPENDIX A

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
FULL LIST ORDERED BY MISSION AND FRAME NUMBER



LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

PAGE 1

MISSION/

FRAME NO.
1005
YR, MO, DY
HR, MI, SECTIME
660618
144249.82S/C POSITION
ALT RT -0.0804 KM/SEC
LAT 1-63 DEG
LONG 84.62 DEGS/C ORIENTATION
TILT ANG 5.36 DEG
TILT AZIM 292.07 DEG
SWING ANG 99.27 DEG
N.DEV. 347.33 DEGPHOTO ILLUMINATION
SUN AZIM 89.15 DEG
INCID ANG 68.41 DEG
EMISS ANG 6.03 DEG
PHASE ANG 62.88 DEG
ALPHA 5.51 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.17 DEG	AB 175.0 KM
A LONG 87.05 DEG	BC 153.7 KM
B LAT -1.46 DEG	CD 188.6 KM
B LONG 85.74 DEG	DA 156.0 KM
C LAT -0.55 DEG	TILT DISTANCE 7.4
C LONG 80.75 DEG	
D LAT 5.54 DEG	
D LONG 82.07 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	3.08 DEG
A LONG	84.61 DEG
B LAT	9.54 DEG
B LONG	84.03 DEG
C LAT	0.68 DEG
C LONG	83.39 DEG
D LAT	3.24 DEG
D LONG	83.96 DEG

MISSION/

FRAME NO.
1006
YR, MO, DY
HR, MI, SECTIME
660618
144259.70S/C POSITION
ALT RT -0.0767 KM/SEC
LAT 1.52 DEG
LONG 85.13 DEGS/C ORIENTATION
TILT ANG 4.84 DEG
TILT AZIM 293.16 DEG
SWING ANG 100.35 DEG
N.DEV. 347.30 DEGPHOTO ILLUMINATION
SUN AZIM 89.11 DEG
INCID ANG 67.84 DEG
EMISS ANG 5.45 DEG
PHASE ANG 62.88 DEG
ALPHA 4.94 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.04 DEG	AB 174.9 KM
A LONG 87.63 DEG	BC 152.8 KM
B LAT -1.58 DEG	CD 167.0 KM
B LONG 86.31 DEG	DA 155.0 KM
C LAT -0.65 DEG	TILT DISTANCE 6.7
C LONG 81.35 DEG	
D LAT 5.38 DEG	
D LONG 82.07 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	2.95 DEG
A LONG	85.18 DEG
B LAT	0.42 DEG
B LONG	84.60 DEG
C LAT	0.56 DEG
C LONG	83.96 DEG
D LAT	3.11 DEG
D LONG	84.54 DEG

PRINCIPAL POINT
LATITUDE 1.88 DEG
LONGITUDE 84.00 DEGPRINCIPAL POINT
LATITUDE 1.76 DEG
LONGITUDE 84.57 DEGPRINCIPAL POINT
LATITUDE 1.76 DEG
LONGITUDE 84.57 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

PAGE 2

MISSION/

FRAME NO.

1007 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 216°.79° KM TILT ANG 4°.33° SUN AZIM 89°.07° DEG LATITUDE 1°.63° DEG
 HR, MI, SEC ALT RT -0.0730 KM/SEC TILT AZIM 294°.50° INCID ANG 67°.27° DEG LONGITUDE 85°.15° DEG
 LAT 1°.41° DEG SWING ANG 101°.68° EMISS ANG 4°.87° DEG
 LONG 85°.64° DEG N.DEV. 347°.27° DEG PHASE ANG 62°.88° DEG
 ALPHA 4°.37° DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 3°.92° DEG AB 174°.8 KM
 A LONG 88°.20° DEG BC 151°.9 KM
 B LAT -1°.70° DEG CD 185°.5 KM
 B LONG 86°.89° DEG DA 154°.2 KM
 C LAT -0°.76° DEG TILT DISTANCE 6.0
 C LONG 81°.96° DEG
 D LAT 8°.23° DEG
 D LONG 83°.27° DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2°.82° DEG AB 78°.2 KM
 A LONG 85°.75° DEG BC 19°.7 KM
 B LAT 0°.31° DEG CD 78°.8 KM
 B LONG 85°.18° DEG DA 19°.8 KM
 C LAT 0°.44° DEG TILT DISTANCE 46.0
 C LONG 84°.54° DEG
 D LAT 2°.98° DEG
 D LONG 85°.11° DEG

MISSION/

FRAME NO.

1008 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 216°.08° KM TILT ANG 3°.83° SUN AZIM 89°.03° DEG LATITUDE 1°.51° DEG
 HR, MI, SEC ALT RT -0.0693 KM/SEC TILT AZIM 296°.19° INCID ANG 66°.69° DEG LONGITUDE 85°.72° DEG
 LAT 1°.30° DEG SWING ANG 103°.37° EMISS ANG 4°.30° DEG
 LONG 86°.15° DEG N.DEV. 347°.25° DEG PHASE ANG 62°.88° DEG
 ALPHA 3°.80° DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 3°.79° DEG AB 174°.7 KM
 A LONG 88°.78° DEG BC 151°.1 KM
 B LAT -1°.82° DEG CD 184°.0 KM
 B LONG 87°.46° DEG DA 153°.3 KM
 C LAT -0°.86° DEG TILT DISTANCE 5.3
 C LONG 82°.56° DEG
 D LAT 5°.07° DEG
 D LONG 83°.86° DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2°.69° DEG AB 77°.9 KM
 A LONG 86°.32° DEG BC 19°.5 KM
 B LAT 0°.19° DEG CD 78°.4 KM
 B LONG 85°.75° DEG DA 19°.8 KM
 C LAT 0°.32° DEG TILT DISTANCE 40.6
 C LONG 85°.12° DEG
 D LAT 2°.85° DEG
 D LONG 85°.69° DEG

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 216°.08° KM TILT ANG 3°.83° SUN AZIM 89°.03° DEG LATITUDE 1°.51° DEG
 HR, MI, SEC ALT RT -0.0693 KM/SEC TILT AZIM 296°.19° INCID ANG 66°.69° DEG LONGITUDE 85°.72° DEG
 LAT 1°.30° DEG SWING ANG 103°.37° EMISS ANG 4°.30° DEG
 LONG 86°.15° DEG N.DEV. 347°.25° DEG PHASE ANG 62°.88° DEG
 ALPHA 3°.80° DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

PAGE 3

MISSION/

FRAME NO.

1009

YR, MO, DY

HR, MI, SEC

TIME
660618S/C POSITION
ALT
ALT RT -0.0656 KM/SECLAT
LONG1.19 DEG
86.66 DEGSWING ANG
N.DEV.105.56. DEG
347.23 DEGTILT ANG
N.DEV.3.02 DEG
PHASE ANGS/C ORIENTATION
TILT AZIM 298.39 DEGEMISS ANG
ALPHAPHOTO ILLUMINATION
SUN AZIM 88.99 DEGINCID ANG
3.74 DEGLATITUDE
1.38 DEGLONGITUDE
86.29 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	3.67 DEG	AB 174.6 KM
A LONG	85.35 DEG	BC 150.4 KM
B LAT	-1.94 DEG	CD 182.6 KM
B LONG	82.03 DEG	DA 152.6 KM
C LAT	-0.97 DEG	TILT DISTANCE 4.6
C LONG	83.16 DEG	
D LAT	4.92 DEG	
D LONG	84.46 DEG	

HIGH RESOLUTION

A LAT	2.57 DEG	PHOTO ILLUMINATION SUN AZIM 88.94 DEG
A LONG	86.89 DEG	INCID ANG 65.55 DEG
B LAT	0.07 DEG	EMISS ANG 3.18 DEG
B LONG	86.32 DEG	PHASE ANG 62.88 DEG
C LAT	0.20 DEG	ALPHA 2.66 DEG
C LONG	85.69 DEG	
D LAT	2.72 DEG	
D LONG	86.26 DEG	

MISSION/

FRAME NO.

1010

YR, MO, DY

HR, MI, SEC

TIME
660618S/C POSITION
ALT
ALT RT -0.0619 KM/SECLAT
LONG1.08 DEG
87.17 DEGSWING ANG
N.DEV.

TILT ANG 301.37 DEG

PHOTO ILLUMINATION
SUN AZIM 88.94 DEGLATITUDE
1.26 DEGLONGITUDE
86.87 DEG

MEDIUM RESOLUTION

A LAT	3.55 DEG	PHOTO ILLUMINATION SUN AZIM 88.94 DEG
A LONG	85.92 DEG	INCID ANG 65.55 DEG
B LAT	-2.07 DEG	EMISS ANG 3.18 DEG
B LONG	88.61 DEG	PHASE ANG 62.88 DEG
C LAT	-1.07 DEG	ALPHA 2.66 DEG
C LONG	83.76 DEG	
D LAT	4.77 DEG	
D LONG	85.05 DEG	

HIGH RESOLUTION

A LAT	2.44 DEG	PHOTO ILLUMINATION SUN AZIM 88.94 DEG
A LONG	87.47 DEG	INCID ANG 65.55 DEG
B LAT	-0.05 DEG	EMISS ANG 3.18 DEG
B LONG	86.90 DEG	PHASE ANG 62.88 DEG
C LAT	0.09 DEG	ALPHA 2.66 DEG
C LONG	86.27 DEG	
D LAT	2.59 DEG	
D LONG	86.84 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

6

MISSION /
FRAME NO.*

TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
	ALT	KM	TILT ANG	DEG	SUN AZIM	DEG	LATITUDE	0.65 DEG
660618	212.21		0+93	DEG	88.64	DEG	LATITUDE	0.65 DEG
144428.24	ALT RT -0.0433	KM/SEC	TILT AZIM 8+11	DEG	62.70	DEG	LONGITUDE	89.72 DEG
	LAT	-0.53	DEG		EMISS. ANG	1.05 DEG		
	LONG	89.70	DEG		PHASE ANG	62.88 DEG		
			N.DEV.		347.15	DEG		

MEDIUM	RESOLUTION	SIDE	LEVEL
CORNER	COORDINATE		
A LAT	2° 94' DEG	AB	175.
A LONG	52° 79' DEG	BC	147.
B LAT	-2° 70' DEG	CD	175.
B LONG	91° 47' DEG	DA	149.
C LAT	-1° 62' DEG	TI LT	DI
C LONG	86° 72' DEG		19
D LAT	4° 04' DEG		
D LONG	87° 57' DEG		

HIGH RESOLUTION		SIM.
CORNER	COORDINATE	
A LAT	1.81	DEG
A LONG	90.431	BC
B LAT	-0.65	CD
B LONG	-87.75	DEG
C LAT	-0.65	DEG
C LONG	89.13	DEG
D LAT	1.95	DEG
D LONG	89.69	DEG

YR, MD
NAME NO.
MISSIONS

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
1.04	88-60° DEG	0.52 DEG
TIIT AZIM	INCID ANG.	LONGITUDE
38.14	62-14° DEG	90.29 DEG
SWING ANG	EMISS ANG	
205.29	1-16° DEG	

S/C POSITION
 TIME 6660618 ALT 211.80 KM
 144438.03 ALT RT -0.0395 KM/SEC
 LAT 0.42 DEG

MEDIUM RESOLUTION		CORNER	COORDINATE	SIDE LENGTH	TILT DISTANCE
A LAT	B LAT				
2° 82 DEG	2° 83 DEG	A LONG	93° 37 OEG	AB 175° 8 KM	CD 174° 6 KM
93° 37 OEG	92° 04 DEG	B LONG	92° 04 DEG	BC 147° 0 KM	DA 149° 3 KM
92° 04 DEG	91° 73 DEG	C LAT	91° 73 DEG	CD 174° 6 KM	DA 149° 3 KM
91° 73 DEG	87° 31 DEG	C LONG	87° 31 DEG	DA 149° 3 KM	CD 175° 8 KM
87° 31 DEG	3° 90 DEG	D LAT	3° 90 DEG	CD 175° 8 KM	AB 174° 6 KM
3° 90 DEG	2° 58 DEG	D LONG	2° 58 DEG	DA 149° 3 KM	BC 147° 0 KM

CORNER	COORDINATE	SIDE LENGTH
A LAT.	1.69 DEG	AB 76.5 KM
A LONG.	90+68 DEG	'BC 19.1 KM
B LAT.	-0.77 DEG	CD .76.4 KM
B LONG.	90+32 DEG	DA 19.3 KM
C LAT.	-0.63 DEG	TILT DISTANCE
C LONG.	89+70 DEG	11.0
D LAT.	1.83 DEG	

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MISSION/ FRAME NO.	TIME YR•MO•DY HR•MIN•SEC	S/C POSITION ALT RT -0.0359 KM/SEC LAT 0.31 DEG LONG -90.72 DEG	S/C ORIENTATION TILT ANG 1.35 DEG TILT AZIM 58.48 DEG SWING ANG 225.63 DEG N.DEV. 347.14 DEG			PHOTO ILLUMINATION SUN AZIM 88.53 DEG INCID ANG 61.57 DEG EMISS ANG 1.51 DEG PHASE ANG 62.88 DEG ALPHA -1.31 DEG			PRINCIPAL POINT LATITUDE 0.40 DEG LONGITUDE 90.86 DEG		
			HIGH RESOLUTION			HIGH RESOLUTION			HIGH RESOLUTION		
MISSION/ FRAME NO.			CORNER COORDINATE SIDE LENGTH			CORNER COORDINATE SIDE LENGTH			CORNER COORDINATE SIDE LENGTH		
1017	660818 144407.01	ALT 211.43 KM ALT RT -0.0359 KM/SEC LAT 0.31 DEG LONG -90.72 DEG	A LAT 2.70 DEG A LONG 93.94 DEG B LAT -2.96 DEG B LONG 92.60 DEG C LAT -1.84 DEG C LONG 87.88 DEG D LAT 3.76 DEG D LONG 89.12 DEG	AB 176.1 KM BC 145.8 KM CD 173.7 KM DA 149.1 KM TILT DISTANCE 1.8	TILT ANG 1.35 DEG TILT AZIM 58.48 DEG SWING ANG 225.63 DEG N.DEV. 347.14 DEG	SUN AZIM 88.53 DEG INCID ANG 61.57 DEG EMISS ANG 1.51 DEG PHASE ANG 62.88 DEG ALPHA -1.31 DEG	A LAT 1.56 DEG A LONG 91.45 DEG B LAT -0.90 DEG B LONG 90.89 DEG C LAT -0.75 DEG C LONG 90.27 DEG D LAT 1.70 DEG D LONG 90.83 DEG	AB 76.4 KM BC 19.1 KM CD 76.2 KM DA 19.2 KM TILT DISTANCE 1.4	SIDE LENGTH AB 76.4 KM BC 19.1 KM CD 76.2 KM DA 19.2 KM TILT DISTANCE 1.4	AB 76.3 KM BC 19.1 KM CD 76.1 KM DA 19.2 KM TILT DISTANCE 1.8	
1018	660818 144457.58	ALT 211.10 KM ALT RT -0.0321 KM/SEC LAT 0.20 DEG LONG 91.22 DEG	A LAT 2.59 DEG A LONG 94.52 DEG B LAT -3.09 DEG B LONG 92.18 DEG C LAT -1.95 DEG C LONG 88.47 DEG D LAT 3.62 DEG D LONG 89.70 DEG	AB 176.5 KM BC 146.7 KM CD 172.9 KM DA 149.3 KM TILT DISTANCE 2.4	TILT ANG 1.76 DEG TILT AZIM 70.23 DEG SWING ANG 237.38 DEG N.DEV. 347.14 DEG	SUN AZIM 88.45 DEG INCID ANG 61.00 DEG EMISS ANG 1.97 DEG PHASE ANG 62.88 DEG ALPHA -1.88 DEG	A LAT 1.44 DEG A LONG 92.02 DEG B LAT -1.02 DEG B LONG 91.45 DEG C LAT -0.87 DEG C LONG 90.84 DEG D LAT 1.58 DEG D LONG 91.40 DEG	AB 76.3 KM BC 19.1 KM CD 76.1 KM DA 19.2 KM TILT DISTANCE 1.8	SIDE LENGTH AB 76.3 KM BC 19.1 KM CD 76.1 KM DA 19.2 KM TILT DISTANCE 1.8	AB 76.3 KM BC 19.1 KM CD 76.1 KM DA 19.2 KM TILT DISTANCE 1.8	

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MISSION/
FRAME NO.

1019 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 210.80 KM TILT ANG 2.22 DEG SUN AZIM 68.38 DEG LATITUDE 0.15 DEG
 HR, MI, SEC ALT RT -0.0284 KM/SEC TILT AZIM 77.34 DEG INCID ANG 60.44 DEG LONGITUDE 91.99 DEG
 LAT 0.09 DEG SWING ANG 244.50 DEG EMISS ANG 2.49 DEG
 LONG 91.73. DEG N.ODEV. 347.14 DEG PHASE ANG 62.88 DEG
 ALPHA -2.44 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 2.47 DEG	AB 177.0 KM	CORNER COORDINATE SIDE LENGTH
A LONG 55.10 DEG	BC 146.6 KM	A LAT 1.31 DEG AB 76.3 KM
B LAT -3.22 DEG	CD 172.1 KM	A LONG 92.58 DEG BC 19.1 KM
B LONG 93.76 DEG	DA 148.9 KM	B LAT -1.14 DEG CD 76.0 KM
C LAT -2.06 DEG	TILT DISTANCE	B LONG 92.02 DEG DA 19.2 KM
C LONG 85.05 DEG	-3.1	C LAT -1.00 DEG TILT DISTANCE
D LAT 3.48 DEG		C LONG 91.41 DEG
D LONG 90.28 DEG		D LAT 1.45 DEG

MISSION/
FRAME NO.

1020 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 210.55 KM TILT ANG 2.70 DEG SUN AZIM 88.30 DEG LATITUDE 0.03 DEG
 HR, MI, SEC ALT RT -0.0247 KM/SEC TILT AZIM 81.96 DEG INCID ANG 59.88 DEG LONGITUDE 92.56 DEG
 LAT -0.01 DEG SWING ANG 249.42 DEG EMISS ANG 3.02 DEG
 LONG 92.23 DEG N.ODEV. 347.15 DEG PHASE ANG 62.88 DEG
 ALPHA -3.01 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 2.35 DEG	AB 177.5 KM	CORNER COORDINATE SIDE LENGTH
A LONG 55.68 DEG	BC 146.6 KM	A LAT 1.19 DEG AB 76.2 KM
B LAT -3.35 DEG	CD 171.3 KM	A LONG 93.15 DEG BC 19.1 KM
B LONG 94.33 DEG	DA 148.9 KM	B LAT -1.26 DEG CD 75.9 KM
C LAT -2.18 DEG	TILT DISTANCE	B LONG 92.59 DEG DA 19.2 KM
C LONG 89.43 DEG	3.7	C LAT -1.12 DEG TILT DISTANCE
D LAT 3.34 DEG		C LONG 91.98 DEG
D LONG 90.85 DEG		D LAT 1.33 DEG

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 210.55 KM TILT ANG 2.70 DEG SUN AZIM 88.30 DEG LATITUDE 0.03 DEG
 HR, MI, SEC ALT RT -0.0247 KM/SEC TILT AZIM 81.96 DEG INCID ANG 59.88 DEG LONGITUDE 92.56 DEG
 LAT -0.01 DEG SWING ANG 249.42 DEG EMISS ANG 3.02 DEG
 LONG 92.23 DEG N.ODEV. 347.15 DEG PHASE ANG 62.88 DEG
 ALPHA -3.01 DEG

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MISSION/
FRAME NO.

1021 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR-MO-DY 660818 ALT 209.84 KM TILT ANG 7.14 DEG SUN AZIM 87.45 DEG LATITUDE -1.04 DEG
 HR-MI-SEC 144:42.61 ALT RT 0.0081 KM/SEC TILT AZIM 94.63 DEG INCID ANG 54.93 DEG LONGITUDE 97.54 DEG
 LAT -0.97 DEG SWING ANG 261.86 DEG EMISS ANG 8.01 DEG
 LONG 96.67 DEG N.DEV. 347.29 DEG PHASE ANG 62.88 DEG
 ALPHA -7.96 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.37 DEG AB 184.3 KM
 A LONG 100.80 DEG BC 149.0 KM
 B LAT -4.55 DEG CD 166.8 KM
 B LONG 99.41 DEG DA 151.6 KM
 C LAT -3.20 DEG TILT DISTANCE 1.0.0
 C LONG 94.67 DEG
 D LAT 2.18 DEG
 D LONG 95.86 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.13 DEG AB 76.9 KM
 A LONG 98.14 DEG BC 19.3 KM
 B LAT -2.35 DEG CD 75.9 KM
 B LONG 97.57 DEG DA 19.4 KM
 C LAT -2.19 DEG TILT DISTANCE
 C LONG 96.95 DEG 76.1
 D LAT 0.25 DEG
 D LONG 97.51 DEG

MISSION/
FRAME NO.

1022 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR-MO-DY 660818 ALT 209.94 KM TILT ANG 7.67 DEG SUN AZIM 87.33 DEG LATITUDE -1.17 DEG
 HR-MI-SEC 144:52.71 ALT RT 0.0120 KM/SEC TILT AZIM 95.14 DEG INCID ANG 54.34 DEG LONGITUDE 98.12 DEG
 LAT -1.09 DEG SWING ANG 262.38 DEG EMISS ANG 8.61 DEG
 LONG 97.19 DEG N.DEV. 347.32 DEG PHASE ANG 62.88 DEG
 ALPHA -8.54 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.26 DEG AB 185.4 KM
 A LONG 101.42 DEG BC 149.6 KM
 B LAT -4.70 DEG CD 166.5 KM
 B LONG 100.02 DEG DA 152.3 KM
 C LAT -3.32 DEG TILT DISTANCE 10.7
 C LONG 95.26 DEG
 D LAT 2.05 DEG
 D LONG 96.45 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.00 DEG AB 77.0 KM
 A LONG 98.73 DEG BC 19.4 KM
 B LAT -2.47 DEG CD 76.0 KM
 B LONG 98.16 DEG DA 19.5 KM
 C LAT -2.32 DEG TILT DISTANCE
 C LONG 97.54 DEG 81.9
 D LAT 0.13 DEG
 D LONG 98.09 DEG

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MISSION /

FRAME NO -

1023 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 660818 ALT TILT ANG 821 DEG SUN AZIM 8721 DEG LATITUDE -130 DEG
 HR, MI, SEC 1447 2.91 ALT RT 0.0159 KM/SEC SWING ANG 9558 DEG INCID ANG 5375 DEG LONGITUDE 9872 DEG
 LAT -120 DEG SWING ANG 26284 DEG EMISS ANG 921 DEG
 LONG 9772 DEG NDEV. 34735 DEG PHASE ANG 6288 DEG
 ALPHA -913 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 115 DEG AB 186.6 KM
 A LONG 102.04 DEG BC 150.3 KM
 B LAT -485 DEG CD 166.3 KM
 B LONG 100.63 DEG DA 153.0 KM
 C LAT -344 DEG TILT DISTANCE 115
 C LONG 95.86 DEG 877
 D LAT 192 DEG C LONG 9813 DEG
 D LONG 97.05 DEG D LAT 000 DEG
 D LONG 9869 DEG D LONG 9928 DEG

MISSION /

FRAME NO -

1024 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 660818 ALT TILT ANG 875 DEG SUN AZIM 8708 DEG LATITUDE -142 DEG
 HR, MI, SEC 144713.01 ALT RT 0.0198 KM/SEC SWING ANG 9597 DEG INCID ANG 5317 DEG LONGITUDE 9931 DEG
 LAT -131 DEG SWING ANG 26324 DEG EMISS ANG 981 DEG
 LONG 9825 DEG NDEV. 34739 DEG PHASE ANG 6288 DEG
 ALPHA -972 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 104 DEG AB 187.9 KM
 A LONG 10246 DEG BC 151.1 KM
 B LAT -500 DEG CD 166.1 KM
 B LONG 10125 DEG DA 153.9 KM
 C LAT -357 DEG TILT DISTANCE 123
 C LONG 9645 DEG 935
 D LAT 179 DEG C LONG 9872 DEG
 D LONG 9764 DEG D LAT 012 DEG
 D LONG 9928 DEG D LONG 9928 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -012 DEG AB 77.2 KM
 A LONG 9932 DEG BC 194 KM
 B LAT -261 DEG CD 761 KM
 B LONG 9876 DEG DA 196 KM
 C LAT -245 DEG TILT DISTANCE 877
 C LONG 9813 DEG
 D LAT 000 DEG
 D LONG 9869 DEG

MISSION /

FRAME NO -

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 660818 ALT TILT ANG 875 DEG SUN AZIM 8708 DEG LATITUDE -142 DEG
 HR, MI, SEC 144713.01 ALT RT 0.0198 KM/SEC SWING ANG 9597 DEG INCID ANG 5317 DEG LONGITUDE 9931 DEG
 LAT -131 DEG SWING ANG 26324 DEG EMISS ANG 981 DEG
 LONG 9825 DEG NDEV. 34739 DEG PHASE ANG 6288 DEG
 ALPHA -972 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -024 DEG AB 775 KM
 A LONG 9942 DEG BC 195 KM
 B LAT -274 DEG CD 763 KM
 B LONG 9935 DEG DA 197 KM
 C LAT -258 DEG TILT DISTANCE 935
 C LONG 9872 DEG
 D LAT 012 DEG
 D LONG 9928 DEG

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MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		ALT	KM	TILT ANG	9.78 DEG	SUN AZIM	88.83 DEG	LATITUDE	1.23 DEG
1025	660818	ALT RT	-0.1109 KM/SEC	TILT AZIM	191.89 DEG	INCID ANG	72.58 DEG	LONGITUDE	76.16 DEG
		LAT	2.49 DEG	SWING ANG	9.02 DEG	EMIS ANG	11.08 DEG		
		LONG	76.42 DEG	N.DEV.	356.92 DEG	PHASE ANG	70.41 DEG		
						ALPHA	1.83 DEG		
MEDIUM RESOLUTION									
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE	
A LAT	4.02 DEG	AB	194.5 KM	A LAT	2.56 DEG	AB	B4.8 KM	A LONG	2.56 DEG
A LONG	78.76 DEG	BC	176.3 KM	A LONG	76.56 DEG	BC	21.7 KM	B LAT	-0.24 DEG
B LAT	-2.40 DEG	CD	199.1 KM	B LAT	85.0 KM	CD	85.0 KM	B LONG	76.44 DEG
B LONG	78.85 DEG	DA	149.5 KM	C LAT	20.2 KM	DA	20.2 KM	C LONG	-0.21 DEG
C LAT	-2.22 DEG	TILT DISTANCE		C LONG	75.72 DEG	TILT DISTANCE		D LAT	0A.8 DEG
C LONG	73.02 DEG	13.8		D LAT	2.59 DEG	0A.8 DEG		D LONG	75.89 DEG
D LAT	4.31 DEG			D LONG	75.89 DEG				
D LONG	73.82 DEG								
HIGH RESOLUTION									
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE	
A LAT	2.56 DEG	AB	B4.8 KM	A LAT	2.96 DEG	AB	B3.6 KM	A LONG	2.15 DEG
A LONG	72.15 DEG	BC	21.4 KM	A LONG	0.20 DEG	BC	21.4 KM	B LAT	0.20 DEG
B LAT	-1.78 DEG	CD	84.0 KM	B LONG	72.08 DEG	CD	84.0 KM	B LONG	72.08 DEG
B LONG	74.44 DEG	DA	20.4 KM	C LAT	0.21 DEG	DA	20.4 KM	C LAT	0.21 DEG
C LAT	-1.76 DEG	TILT DISTANCE		C LONG	71.37 DEG	TILT DISTANCE		D LAT	2.98 DEG
C LONG	68.77 DEG	10.1		D LAT	71.37 DEG	77.0		D LONG	71.48 DEG
D LAT	4.72 DEG			D LONG					
D LONG	69.31 DEG								

MISSION/
FRAME NO.1026 TIME
660819
051116.11

MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		ALT	KM	TILT ANG	7.22 DEG	SUN AZIM	88.94 DEG	LATITUDE	1.62 DEG
		ALT RT	-0.1133 KM/SEC	TILT AZIM	201.64 DEG	INCID ANG	73.26 DEG	LONGITUDE	71.77 DEG
		LAT	2.51 DEG	SWING ANG	19.88 DEG	EMIS ANG	8.17 DEG		
		LONG	72.13 DEG	N.DEV.	358.05 DEG	PHASE ANG	70.26 DEG		
						ALPHA	2.84 DEG		
MEDIUM RESOLUTION									
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE	
A LAT	4.49 DEG	AB	189.9 KM	A LAT	2.96 DEG	AB	B3.6 KM	A LONG	2.15 DEG
A LONG	74.36 DEG	BC	21.4 KM	A LONG	0.20 DEG	BC	21.4 KM	B LAT	0.20 DEG
B LAT	-1.78 DEG	CD	84.0 KM	B LONG	72.08 DEG	CD	84.0 KM	B LONG	72.08 DEG
B LONG	74.44 DEG	DA	20.4 KM	C LAT	0.21 DEG	DA	20.4 KM	C LAT	0.21 DEG
C LAT	-1.76 DEG	TILT DISTANCE		C LONG	71.37 DEG	TILT DISTANCE		D LAT	2.98 DEG
C LONG	68.77 DEG	10.1		D LAT	71.37 DEG	77.0		D LONG	71.48 DEG
D LAT	4.72 DEG			D LONG					
D LONG	69.31 DEG								
HIGH RESOLUTION									
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE	
A LAT	2.96 DEG	AB	B3.6 KM	A LAT	2.15 DEG	AB	B3.6 KM	A LONG	0.20 DEG
A LONG	0.20 DEG	BC	21.4 KM	A LONG	72.08 DEG	BC	21.4 KM	B LAT	72.08 DEG
B LAT	0.20 DEG	CD	84.0 KM	B LONG	0.21 DEG	CD	84.0 KM	B LONG	0.21 DEG
B LONG	0.21 DEG	DA	20.4 KM	C LAT	71.37 DEG	DA	20.4 KM	C LAT	71.37 DEG
C LAT	0.21 DEG	TILT DISTANCE		C LONG	71.37 DEG	TILT DISTANCE		D LAT	2.98 DEG
C LONG	0.21 DEG	10.1		D LAT	71.37 DEG	77.0		D LONG	71.48 DEG
D LAT	0.21 DEG			D LONG					
D LONG	0.21 DEG								

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S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT			
YR, MO, DY	660819	ALT	228.11 KM	TILT ANG	5.69 DEG	SUN AZIM	89.00 DEG	LATITUDE	1.84 DEG	LONGITUDE	69.77 DEG	INCID ANG	73.41 DEG	EMISS ANG	6.44 DEG
HR, MI, SEC	084544.51	ALT RT	-0.1135 KM/SEC	TILT AZIM	207.64 DEG	SWING ANG	26.38 DEG	PHASE ANG	70.41 DEG	N.DEV.	358.61 DEG	ALPHA	2.91 DEG		
LAT 2.50 DEG LONG 70.12, DEG				N.DEV.											

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S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT			
YR, MO, DY	660819	ALT	1304.34 KM	TILT ANG	1.60 DEG	SUN AZIM	275.84 DEG	LATITUDE	-10.23 DEG	LONGITUDE	-153.79 DEG	INCID ANG	225.50 DEG	EMISS ANG	2.80 DEG
HR, MI, SEC	170520.91	ALT RT	0.3376 KM/SEC	TILT AZIM	225.50 DEG	SWING ANG	220.67 DEG	PHASE ANG	69.70 DEG	N.DEV.	174.99 DEG	ALPHA	-1.82 DEG		
LAT -9.39 DEG LONG -152.92 DEG				N.DEV.											

S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT			
YR, MO, DY	660819	ALT	243.5 KM	TILT ANG	1.60 DEG	SUN AZIM	275.84 DEG	LATITUDE	-10.23 DEG	LONGITUDE	-153.79 DEG	INCID ANG	73.41 DEG	EMISS ANG	6.44 DEG
HR, MI, SEC	170520.91	ALT RT	0.09.2 KM	TILT AZIM	225.50 DEG	SWING ANG	220.67 DEG	PHASE ANG	69.70 DEG	N.DEV.	174.99 DEG	ALPHA	-1.82 DEG		
LAT 8.27 DEG LONG -135.48 DEG				N.DEV.											

S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT			
YR, MO, DY	660819	ALT	243.5 KM	TILT ANG	1.60 DEG	SUN AZIM	275.84 DEG	LATITUDE	-10.23 DEG	LONGITUDE	-153.79 DEG	INCID ANG	73.41 DEG	EMISS ANG	6.44 DEG
HR, MI, SEC	170520.91	ALT RT	0.09.2 KM	TILT AZIM	225.50 DEG	SWING ANG	220.67 DEG	PHASE ANG	69.70 DEG	N.DEV.	174.99 DEG	ALPHA	-1.82 DEG		
LAT 8.27 DEG LONG -135.48 DEG				N.DEV.											

S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT			
YR, MO, DY	660819	ALT	243.5 KM	TILT ANG	1.60 DEG	SUN AZIM	275.84 DEG	LATITUDE	-10.23 DEG	LONGITUDE	-153.79 DEG	INCID ANG	73.41 DEG	EMISS ANG	6.44 DEG
HR, MI, SEC	170520.91	ALT RT	0.09.2 KM	TILT AZIM	225.50 DEG	SWING ANG	220.67 DEG	PHASE ANG	69.70 DEG	N.DEV.	174.99 DEG	ALPHA	-1.82 DEG		
LAT 8.27 DEG LONG -135.48 DEG				N.DEV.											

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1029	YR.MD.DY HR.MI.SEC	660819 231834.91	ALT RT -0.158 KM/SEC	TILT AZIM 206.70 DEG	SUN AZIM 88.90 DEG	LATITUDE 1.58 DEG
MEDIUM RESOLUTION						
	A LAT	4.48 DEG	AB 191.7 KM	INCID ANG 7.82 DEG	INCID ANG 74.38 DEG	LONGITUDE 51.41 DEG
	A LONG	64.01 DEG	BC 174.7 KM	SWING ANG 25.09 DEG	EMISS ANG 8.86 DEG	
	B LAT	-1.86 DEG	CD 201.3 KM	PHASE ANG 70.41 DEG		
	B LONG	64.11 DEG	DA 154.8 KM	ALPHA 3.81 DEG		
HIGH RESOLUTION						
MISSION/ FRAME NO.		TIME	CORNER COORDINATE	CORNER COORDINATE	SIDE LENGTH	PRINCIPAL POINT
1030	YR.MD.DY HR.MI.SEC	660820 0735 0.71	ALT RT 0.3393 KM/SEC	A LAT 2.03 DEG	AB 84.8 KM	
			LAT -9.41 DEG	A LONG 61.79 DEG	BC 21.8 KM	
			LONG -161.18 DEG	B LAT 0.13 DEG	CD 85.3 KM	
				B LONG 61.72 DEG	DA 20.7 KM	
MEDIUM RESOLUTION						
	A LAT	1258.72 KM	TILT ANG 2.31 DEG	PHOTO ILLUMINATION	PRINCIPAL POINT	
	A LONG	0.3393 KM/SEC	INCID ANG 276.20 DEG	LATITUDE -10.27 DEG		
	B LAT	-9.41 DEG	EMISS ANG 65.40 DEG	LONGITUDE -162.71 DEG		
	B LONG	178.79 DEG	PHASE ANG 4.05 DEG			
	C LAT	7.81 DEG	ALPHA -3.32 DEG			
HIGH RESOLUTION						
MISSION/ FRAME NO.		TIME	CORNER COORDINATE	CORNER COORDINATE	SIDE LENGTH	PRINCIPAL POINT
1030	YR.MD.DY HR.MI.SEC	660820 0735 0.71	ALT RT 1258.72 KM	A LAT -18.01 DEG	AB 476.2 KM	
			LAT -9.41 DEG	A LONG -165.60 DEG	BC 118.5 KM	
			LONG -161.18 DEG	B LAT -2.32 DEG	CD 473.6 KM	
				B LONG -163.98 DEG	DA 120.3 KM	
				C LAT -2.71 DEG	TILT DISTANCE 24.5	
				D LAT -18.33 DEG		
				D LONG -161.43 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.1031
YR, MO, DY
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	ALT ANG	10.99 DEG	SUN AZIM	88.92 DEG	LATITUDE	2.54 DEG
660620	242.57 KM	ALT RT	-0.1491 KM/SEC	TILT AZIM	234.55 DEG	LONGITUDE	47.96 DEG
134659.21		LAT	3.44 DEG	SWING ANG	53.36 DEG		
	LONG	4.9.23 DEG	N.DEV.	358.22 DEG	PHASE ANG	70.18 DEG	
					ALPHA	10.17 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	
A LAT	5.55 DEG	AB	195.6 KM
A LONG	50.66 DEG	BC	189.7 KM
B LAT	-0.91 DEG	CD	223.5 KM
B LONG	50.72 DEG	DA	168.2 KM
C LAT	-1.38 DEG	TILT DISTANCE	
C LONG	44.47 DEG	15.5	
D LAT	5.99 DEG		
D LONG	45.08 DEG		

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH	
A LAT	3.97 DEG	AB	89.5 KM
A LONG	48.37 DEG	BC	23.4 KM
B LAT	1.02 DEG	CD	91.0 KM
B LONG	48.29 DEG	DA	22.3 KM
C LAT	1.00 DEG	TILT DISTANCE	
C LONG	47.52 DEG	18.1	
D LAT	4.00 DEG		
D LONG	47.63 DEG		

MISSION/
FRAME NO.1032
YR, MO, DY
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	ALT ANG	9.88 DEG	SUN AZIM	88.32 DEG	LATITUDE	2.15 DEG
660620	237.71 KM	ALT RT	-0.1373 KM/SEC	TILT AZIM	227.27 DEG	LONGITUDE	49.94 DEG
134733.11		LAT	3.09 DEG	SWING ANG	45.85 DEG		
	LONG	50.94 DEG	N.DEV.	358.08 DEG	PHASE ANG	70.18 DEG	
					ALPHA	8.17 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	
A LAT	5.11 DEG	AB	193.4 KM
A LONG	52.59 DEG	BC	183.6 KM
B LAT	-1.28 DEG	CD	215.1 KM
B LONG	52.67 DEG	DA	162.5 KM
C LAT	-1.60 DEG	TILT DISTANCE	
C LONG	46.60 DEG	13.9	
D LAT	5.49 DEG		
D LONG	47.21 DEG		

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH	
A LAT	3.56 DEG	AB	87.6 KM
A LONG	50.34 DEG	BC	22.7 KM
B LAT	0.66 DEG	CD	88.7 KM
B LONG	50.26 DEG	DA	21.6 KM
C LAT	0.65 DEG	TILT DISTANCE	
C LONG	49.51 DEG	13.9	
D LAT	3.59 DEG		
D LONG	49.62 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT		
1035	YR, MO, DY HR, MI, SEC	660829 1452 0.91	ALT RT 0.3283 LAT -9.03 LONG -162.51	KM/SEC TILT AZIM 343.14 SWING ANG 337.85 N.DEV. 174.70	SUN AZIM 274.81 DEG INCID ANG 70.00 DEG EMISS ANG 0.74 DEG PHASE ANG 70.27 DEG ALPHA -0.27 DEG	LATITUDE -8.72 DEG LONGITUDE -153.69 DEG		
MEDIUM RESOLUTION								
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH
A LAT	-27.32 DEG	AB 260.2 KM	A LAT	-16.56 DEG	AB 488.9 KM	A LAT	-16.56 DEG	AB 488.9 KM
A LONG	175.11 DEG	BC 071.4 KM	A LONG	-165.48 DEG	BC 123.1 KM	A LONG	-165.48 DEG	BC 123.1 KM
B LAT	14.88 DEG	CD 253.6 KM	B LAT	-0.44 DEG	CD 488.7 KM	B LAT	-0.44 DEG	CD 488.7 KM
B LONG	-179.12 DEG	DA 055.0 KM	B LONG	-163.88 DEG	DA 122.5 KM	B LONG	-163.88 DEG	DA 122.5 KM
C LAT	11.43 DEG	TILT DISTANCE 0.5	C LAT	-0.82 DEG	TIILT DISTANCE 4.4	C LAT	-159.84 DEG	TIILT DISTANCE 4.4
C LONG	-142.33 DEG	D LAT -30.85 DEG	D LAT	-16.94 DEG	D LONG -161.28 DEG	D LAT	-16.94 DEG	D LONG -161.28 DEG
D LONG	-144.39 DEG		D LONG	-0.21 DEG				
HIGH RESOLUTION								
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH
A LAT	-27.24 DEG	AB 259.4 KM	A LAT	-14.51 DEG	AB 490.4 KM	A LAT	-14.51 DEG	AB 490.4 KM
A LONG	175.77 DEG	BC 077.1 KM	A LONG	-164.98 DEG	BC 123.5 KM	A LONG	-164.98 DEG	BC 123.5 KM
B LAT	14.94 DEG	CD 264.6 KM	B LAT	-0.34 DEG	CD 490.5 KM	B LAT	-0.34 DEG	CD 490.5 KM
B LONG	-178.60 DEG	DA 057.8 KM	B LONG	-163.39 DEG	DA 122.9 KM	B LONG	-163.39 DEG	DA 122.9 KM
C LAT	11.76 DEG	TILT DISTANCE 0.6	C LAT	-0.71 DEG	TIILT DISTANCE 4.9	C LAT	-159.33 DEG	TIILT DISTANCE 4.9
C LONG	-141.55 DEG,	D LAT -30.51 DEG	D LAT	-16.89 DEG	D LONG -160.76 DEG	D LONG	-16.89 DEG	D LONG -160.76 DEG
D LONG	-143.63 DEG							

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

	TIME YR.MD.DY HR.MI.SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION TILT AZIM SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE
1037	6608220 1454 9.81	1380.94 KH 0.3161 KH/SEC -8.63 DEG -159.82 DEG	2.68 DEG 72.49 DEG 67.63 DEG 175.38 DEG	273.75 DEG 74.74 DEG 4.81 DEG 70.27 DEG	-7.98 DEG -157.76 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -26.59 DEG	AB 257.4 KM	A LAT -16.05 DEG	AB 503.6 KM
A LONG -178.72 DEG	BC 150.0 KM	A LONG -160.56 DEG	BC 128.1 KM
B LAT 15.64 DEG	CD 377.0 KM	B LAT 0.57 DEG	CD 507.3 KM
B LONG -174.18 DEG	DA 97.1 KM	B LONG -159.13 DEG	DA 126.6 KM
C LAT 15.17 DEG	TILT DISTANCE 3.7	C LAT 0.30 DEG	TILT DISTANCE 28.4
C LONG -133.59 DEG		C LONG -154.91 DEG	
D LAT -31.49 DEG		D LAT -16.45 DEG	
D LONG -136.70 DEG		D LONG -156.23 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -26.59 DEG	AB 257.4 KM	A LAT -16.05 DEG	AB 503.6 KM
A LONG -178.72 DEG	BC 150.0 KM	A LONG -160.56 DEG	BC 128.1 KM
B LAT 15.64 DEG	CD 377.0 KM	B LAT 0.57 DEG	CD 507.3 KM
B LONG -174.18 DEG	DA 97.1 KM	B LONG -159.13 DEG	DA 126.6 KM
C LAT 15.17 DEG	TILT DISTANCE 3.7	C LAT 0.30 DEG	TILT DISTANCE 28.4
C LONG -133.59 DEG		C LONG -154.91 DEG	
D LAT -31.49 DEG		D LAT -16.45 DEG	
D LONG -136.70 DEG		D LONG -156.23 DEG	

MISSION/
FRAME NO.

	TIME YR.MD.DY HR.MI.SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION TILT AZIM SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE
1038	6608220 145423.01	1385.10 KH 0.3148 KH/SEC -8.59 DEG -159.54 DEG	2.95 DEG 73.27 DEG 68.45 DEG 175.44 DEG	273.65 DEG 75.23 DEG 5.31 DEG 70.27 DEG	-7.99 DEG -157.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -26.52 DEG	AB 257.6 KM	A LAT -16.00 DEG	AB 505.2 KM
A LONG -178.11 DEG	BC 162.0 KM	A LONG -160.06 DEG	BC 128.7 KM
B LAT 15.73 DEG	CD 392.5 KM	B LAT 0.68 DEG	CD 509.4 KM
B LONG -173.68 DEG	DA 103.5 KM	B LONG -158.65 DEG	DA 127.1 KM
C LAT 15.64 DEG	TILT DISTANCE 4.1	C LAT 0.43 DEG	TILT DISTANCE 31.3
C LONG -133.00 DEG		C LONG -154.40 DEG	
D LAT -31.57 DEG		D LAT -16.40 DEG	
D LONG -135.85 DEG		D LONG -155.71 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -26.52 DEG	AB 257.6 KM	A LAT -16.00 DEG	AB 505.2 KM
A LONG -178.11 DEG	BC 162.0 KM	A LONG -160.06 DEG	BC 128.7 KM
B LAT 15.73 DEG	CD 392.5 KM	B LAT 0.68 DEG	CD 509.4 KM
B LONG -173.68 DEG	DA 103.5 KM	B LONG -158.65 DEG	DA 127.1 KM
C LAT 15.64 DEG	TILT DISTANCE 4.1	C LAT 0.43 DEG	TILT DISTANCE 31.3
C LONG -133.00 DEG		C LONG -154.40 DEG	
D LAT -31.57 DEG		D LAT -16.40 DEG	
D LONG -135.85 DEG		D LONG -155.71 DEG	

LUNAR GREITER PHOTOGRAFIC SUPPORTING DATA

2001-1 FIRST CROSSBED BY MTS 701 AND CRANE NUMBER 04/10/2001

MISSION /

TIME		S/C POSITION		S/C ORIENTATION		PHOTO-ILLUMINATION		PRINCIPAL POINT	
1039	YR:MO:DY	660820	ALT	1451.41	KN	TILT ANG	7.34	SUN AZIM	272.27 DEG
	HR:MIN:SEC	1458 1.01	ALT RT	0.2933	KN/SEC	TILT AZIM	77.42	INCID ANG	83.32 DEG
			LAT	-7.89	DEG	SWING ANG	73.25	EMISS ANG	13.57 DEG
			LONG	-155.17	DEG	N.DEV.	176.24	PHASE ANG	70.27 DEG
								ALPHA	13.03 DEG

COORDINATE	RESOLUTION	SIDE LENGTH
A LAT -25.38 DEG	AB	271.8 KM
A LONG -166.67 DEG	BC	830.5 KM
B LAT -17.50 DEG	CD	601.3 KM
B LONG -165.67 DEG	DA	302.5 KM
C LAT 23.98 DEG	TI	DISTANCE
C LONG -164.42 DEG		10.3
D LAT -33.76 DEG		
D LONG -168.42 DEG		

HIGH RESOLUTION		SIDE LENGTH	DISTANCE
CORNER COORDINATE			
A LAT	+15°.05 DEG.	AB	534.5 KM
A LONG	-151.81 DEG.	BC	141.5 KM
B LAT	2°.62 DEG	CD	546.4 KM
B LONG	-150.57 DEG	DA	137.4 KM
C LAT	2°.59 DEG	TILT DISTANCE	
C LONG	-145.90 DEG	78.3	
D LAT	-15°.48 DEG		
D LONG	-147.12 DEG		

SESSION /
ANE NO.
40
YR. NO
HR. M1

TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT		
	ALT	KM/SEC	TILT ANG	DEG	SUN AZIM	DEG	LATITUDE	DEG	
1650 0220	1453.87	KM	7.51	DEG	272.23	DEG	-5.44	DEG	
1658 9.41	0.2925	KM/SEC	77.47	DEG	INCID ANG	83.64	DEG	-148.74	DEG
	ALT RT		TILT AZIM		EMISS ANG	13.89	DEG		
	LAT		SWING ANG		PHASE ANG				
	LONG		NDEV.		70.27	DEG			
			176.26	DEG	ALPHA	13.35	DEG		

MEDIUM RESOLUTION	
CORNER COORDINATE	SIDE LENGTH
A LAT -25.34 DEG	AB 272.7
A LONG -168.32 DEG	BC 832.5
B LAT 17.58 DEG	CD 522.7
B LONG -165.36 DEG	DA 316.7
C LAT 22.17 DEG	TILT DIST 10.5
C LONG -110.43 DEG	
D LAT -23.92 DEG	
D LONG -112.47 DEG	

HIGH RESOLUTION		SITE
CORNER	COORDINATE	
A' LAT	-15°.01	DEG
A LONG	-151°.49	DEG
B' LAT	-2°.70	DEG
B LONG	-150°.26	DEG
C' LAT	2°.68	DEG
C LONG	-145°.96	DEG
D' LAT	-15°.44	DEG
D LONG	-145°.72	DEG

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PRINCIPAL POINT
LATITUDE -6°49 DEG
LONGITUDE -149°05 DEG

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	+41°05' DEG.	AB 534.5 KM
A LONG	-151°.81 DEG.	BC 141.5 KM
B LAT	-2°02' DEG	CD 546.4 KM
B LONG	-150°.57 DEG	DA 137.4 KM
C LAT	2°59' DEG	TILT DISTANCE
C LONG	114°.90 DEG	79.3

PRINCIPAL POINT
LATITUDE -6.444 DEG
LONGITUDE -148.74 DEG

SIDE LENGTH
 A 535.7 KM
 C 142.1 KM
 D 548.0 KM
 E 137.9 KM
 TOTAL DISTANCE
 80.1

HIGH RESOLUTION		SITE
CORNER	COORDINATE	
A LAT	-15°.01	DEG
A LONG	-151°.49	DEG
B LAT	-2°.70	DEG
B LONG	-150°.26	DEG
C LAT	2°.68	DEG
C LONG	-145°.96	DEG
D LAT	-15°.44	DEG
D LONG	-145°.72	DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

EIII. LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION /
FRAME NO.
1041 YR. MO.
HR. MIN.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	256.43 KW	TILT ANG 14.71 DEG	SUN AZIM 88.76 DEG
ALT RT	-0.1771 KW/SEC	TILT AZIM 244.08 DEG	INCID ANG 85.53 DEG
LAT	4.29 DEG	SWING ANG 63.37 DEG	EWISS ANG 16.95 DEG
LONG	41.17 DEG	N.DEV. 358.43 DEG	PHASE ANG 70.22 DEG
			ALPHA 15.27 DEG

MEDIUM	RESOLUTION	SIDE LENGTH
CORNER	COORDINATE	
A	LAT	6°50 DEG
A	LONG	42°00 DEG
B	LAT	-6°26 DEG
B	LONG	42°10 DEG
C	LAT	-7°18 DEG
C	LONG	35°12 DEG
D	LAT	7°10 DEG
D	LONG	25°23 DEG

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	4.85 DEG	AB S
A LONG	39.59 DEG	BC S
B LAT	1.68 DEG	CD S
B LONG	39.52 DEG	DA 2
C LAT	1.63 DEG	TILT 5
C LONG	38.67 DEG	
D LAT	4.88 DEG	
D LONG	38.78 DEG	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 14.71 DEG	SUN AZIM 88.76 DEG	3-30 DEG
TILT AZIM 244.08 DEG	INCID ANG 85.53 DEG	39.15 DEG
SWING ANG 63.37 DEG	EMISS ANG 16.95 DEG	
N.DEV. 358.43 DEG	PHASE ANG 70.22 DEG	
	ALPHA	15.27 DEG

LENGTH	5.9 KM
	5.8 KM
	5.6 KM
	5.4 KM
DISTANCE	4.4 KM
	3.7 KM

MISSION /
FRAME NO.
1042 YR. NO.
HR. MI.

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
16. ⁴ 46 DEG	88. ⁵⁷ DEG	A. ³⁶ DEG
TILT AZIM	INCID ANG	LONGITUDE
259. ⁹² DEG	89. ¹⁰ DEG	31. ⁸⁶ DEG
SWING ANG	EMISS ANG	
80. ³⁴ DEG	19. ⁰⁷ DEG	
N.DEV.	PHASE ANG	
0. ⁰⁷ DEG	70. ²⁷ DEG	
	ALPHA	18. ⁸³ DEG

MEDIUM	RESOLUTION	SIDE	LINE
CORNER	COORDINATE		
A	LAT	7° 75 DEG	AB 221
A	LONG	34° .82 DEG	BC 221
B	LAT	0° .90 DEG	CD 266.6
B	LONG	34° .53 DEG	DA 208
C	LAT	-1° C 29 DEG,	TILT D
C	LONG	27° .72 DEG	23
D	LAT	8° .52 DEG	
D	LONG	27° .92 DEG	

	HIGH RESOLUTION	SIDE LENGTH
CORNER	COORDINATE	
A LAT	5.99 DEG	AB 99.2 KM
A LONG	32.28 DEG	BC 27.1 KM
B LAT	2.71 DEG	CD 102.3 KM
B LONG	32.30 DEG	DA 26.4 KM
C LAT	2.64 DEG	TILT DISTANCE
C LONG	31.40 DEG	79.6
D LAT	6.02 DEG	
D LONG	31.41 DEG	

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MISSION/
FRAME NO.

1044 TIME 660E21 S/C POSITION ALT 67.25 KM TILT ANG 7.21 DEG PRINCIPAL POINT SUN AZIM 88.82 DEG LATITUDE 1.18 DEG YR, MO, DY HR, MI, SEC 112E 0.21 ALT RT -0.0710 KM/SEC TILT AZIM 187.66 DEG LONGITUDE 46.12 DEG LAT 1.46 DEG SWING ANG 5.99 DEG EMISS ANG 7.50 DEG LONG 46.15. DEG N.DEV. 358.27 DEG PHASE ANG 70.27 DEG ALPHA 0.82 DEG

MISSION/
FRAME NO.

1046 TIME 660E21 S/C POSITION ALT 85.87 KM TILT ANG 14.80 DEG PRINCIPAL POINT SUN AZIM 88.91 DEG LATITUDE 3.19 DEG YR, MO, DY HR, MI, SEC 10223 2.81 ALT RT -0.1586 KM/SEC TILT AZIM 232.65 DEG LONGITUDE 31.20 DEG LAT 3.65 DEG SWING ANG 51.21 DEG C LONG 31.80 DEG N.DEV. 357.57 DEG PHASE ANG 70.22 DEG ALPHA 12.27 DEG

MISSION/
FRAME NO.

1046 TIME 660E21 S/C POSITION ALT 85.87 KM TILT ANG 14.80 DEG PRINCIPAL POINT SUN AZIM 88.91 DEG LATITUDE 3.19 DEG YR, MO, DY HR, MI, SEC 10223 2.81 ALT RT -0.1586 KM/SEC TILT AZIM 232.65 DEG LONGITUDE 31.20 DEG LAT 3.65 DEG SWING ANG 51.21 DEG N.DEV. 357.57 DEG PHASE ANG 70.22 DEG ALPHA 12.27 DEG

MISSION/
FRAME NO.

1046 TIME 660E21 S/C POSITION ALT 85.87 KM TILT ANG 14.80 DEG PRINCIPAL POINT SUN AZIM 88.91 DEG LATITUDE 3.19 DEG YR, MO, DY HR, MI, SEC 10223 2.81 ALT RT -0.1586 KM/SEC TILT AZIM 232.65 DEG LONGITUDE 31.20 DEG LAT 3.65 DEG SWING ANG 51.21 DEG N.DEV. 357.57 DEG PHASE ANG 70.22 DEG ALPHA 12.27 DEG

MISSION/
FRAME NO.

1046 TIME 660E21 S/C POSITION ALT 85.87 KM TILT ANG 14.80 DEG PRINCIPAL POINT SUN AZIM 88.91 DEG LATITUDE 3.19 DEG YR, MO, DY HR, MI, SEC 10223 2.81 ALT RT -0.1586 KM/SEC TILT AZIM 232.65 DEG LONGITUDE 31.20 DEG LAT 3.65 DEG SWING ANG 51.21 DEG N.DEV. 357.57 DEG PHASE ANG 70.22 DEG ALPHA 12.27 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.
1047
YR, MO, DY
HR, MI, SECTIME
660621
1823 9.51S/C POSITION
ALT RT -0.1555 KM/SEC
LAT 3.57 DEG
LONG 32.19 DEGS/C ORIENTATION
TILT ANG 14.54 DEG
TILT AZIM 231.53 DEG
SWING ANG 50.02 DEG
N.DEV. 357.53 DEGPHOTO ILLUMINATION
SUN AZIM 88.92 DEG
INCID ANG 82.19 DEG
EMISS. ANG 15.27 DEG
PHASE ANG 70.22 DEG
.ALPHA .11.85 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.15 DEG AB 68.3 KM
A LONG 32.57 DEG BC 67.9 KM
B LAT 1.90 DEG CD 79.6 KM
B LONG 32.60 DEG DA 58.2 KM
C LAT 1.71 DEG TILT DISTANCE
C LONG 30.36 DEG 20.7
D LAT 4.32 DEG
D LONG 30.65 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.62 DEG AB 31.8 KM
A LONG 31.57 DEG BC 8.4 KM
B LAT 31.73 DEG CD 32.5 KM
B LONG 31.73 DEG DA 7.9 KM
C LAT 2.56 DEG TILT DISTANCE
C LONG 31.45 DEG 57.7
D LAT 3.63 DEG
D LONG 31.51 DEG

MISSION/

FRAME NO.
1048
YR, MO, DY
HR, MI, SECTIME
660622
012250.81S/C POSITION
ALT RT -0.1089 KM/SEC
LAT 2.35 DEG
LONG 34.14 DEGS/C ORIENTATION
TILT ANG 9.41 DEG
TILT AZIM 218.44 DEG
SWING ANG 36.93 DEG
N.DEV. 358.09 DEGPHOTO ILLUMINATION
SUN AZIM 88.96 DEG
INCID ANG 76.37 DEG
EMISS. ANG 9.81 DEG
PHASE ANG 70.28 DEG
.ALPHA 5.96 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.93 DEG AB 58.1 KM
A LONG 34.70 DEG BC 53.7 KM
B LAT 1.01 DEG CD 62.6 KM
B LONG 34.72 DEG DA 47.9 KM
C LAT 0.97 DEG TILT DISTANCE
C LONG 32.94 DEG 13.2
D LAT 3.03 DEG
D LONG 33.11 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.47 DEG AB 26.3 KM
A LONG 34.02 DEG BC 6.8 KM
B LAT 1.60 DEG CD 26.6 KM
B LONG 33.99 DEG DA 6.5 KM
C LAT 1.60 DEG TILT DISTANCE
C LONG 33.77 DEG 00.8
D LAT 2.47 DEG
D LONG 33.80 DEGPHOTO ILLUMINATION
SUN AZIM 88.96 DEG
INCID ANG 76.37 DEG
EMISS. ANG 9.81 DEG
PHASE ANG 70.28 DEG
.ALPHA 5.96 DEGPRINCIPAL POINT
LATITUDE 3.12 DEG
LONGITUDE 31.62 DEG

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MISSION/
FRAME NO.1049
YR. MO.DY
HR.MI.SECTIME
660622
0123 3.91S/C POSITION
ALT 70.28 KM
ALT RT -0.1025 KM/SEC
LAT 2.19 DEG
LONG 34.91 DEGS/C ORIENTATION
TILT ANG 9.09 DEG
TILT AZIM 214.05 DEG
SWING ANG 32.45 DEG
NDEV. 358.04 DEGPHOTO ILLUMINATION
SUN AZIM 88.94 DEG
INCID ANG 75.57 DEG
EMISS ANG 9.46 DEG
PHASE ANG 70.28 DEG
ALPHA 5.14 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.75 DEG	AB 57.2 KM
A LONG 35.49 DEG	BC 52.6 KM
B LAT 0.86 DEG	CD 61.0 KM
B LONG 35.51 DEG	DA 46.8 KM
C LAT 0.83 DEG	TILT DISTANCE 12.7
C LONG 33.78 DEG	
D LAT 2.84 DEG	
D LONG 33.95 DEG	

PHOTO ILLUMINATION
PRINCIPAL POINT
LATITUDE 1.88 DEG
LONGITUDE 34.70 DEGMISSION/
FRAME NO.1050
YR. MO.DY
HR.MI.SECTIME
660622
082413.01S/C POSITION
ALT 60.10 KM
ALT RT -0.0095 KM/SEC
LAT -0.19 DEG
LONG 42.14 DEGS/C ORIENTATION
TILT ANG 13.06 DEG
TILT AZIM 165.03 DEG
SWING ANG 331.59 DEG
NDEV. 357.18 DEGPHOTO ILLUMINATION
PRINCIPAL POINT
LATITUDE -0.61 DEG
LONGITUDE 42.34 DEG

CORNER COORDINATE	SIDE LENGTH
A LAT 0.15 DEG	AB 54.4 KM
A LONG 43.46 DEG	BC 47.3 KM
B LAT -1.65 DEG	CD 50.0 KM
B LONG 43.11 DEG	DA 39.6 KM
C LAT 1.45 DEG	TILT DISTANCE 18.5
C LONG 41.56 DEG	
D LAT 0.19 DEG	
D LONG 41.75 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT 2.29 DEG	AB 25.8 KM
A LONG 34.82 DEG	BC 6.6 KM
B LAT 1.44 DEG	CD 26.0 KM
B LONG 34.80 DEG	DA 6.3 KM
C LAT 1.44 DEG	TILT DISTANCE 97.2
C LONG 34.58 DEG	
D LAT 2.30 DEG	
D LONG 34.61 DEG	

PHOTO ILLUMINATION
PRINCIPAL POINT
LATITUDE 88.05 DEG
LONGITUDE 64.43 DEGEMISS ANG 13.52 DEG
PHASE ANG 70.29 DEG
ALPHA -6.47 DEG

CORNER COORDINATE	SIDE LENGTH
A LAT -0.25 DEG	AB 22.9 KM
A LONG 42.44 DEG	BC 5.9 KM
B LAT -1.01 DEG	CD 22.6 KM
B LONG 42.41 DEG	DA 5.4 KM
C LAT -0.99 DEG	TILT DISTANCE 41.1
C LONG 42.22 DEG	
D LAT -0.24 DEG	
D LONG 42.26 DEG	

PHOTO ILLUMINATION
PRINCIPAL POINT
LATITUDE -0.61 DEG
LONGITUDE 42.34 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
EQUI LIST ORDERED BY MISSION AND FRAME NUMBER

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION

FRAME NO.
1051 YR. NO
HR. MI

LAT	-0.28 DEG	SWING ANG N.DEV.	330.47 DEG	PHASE ANG ALPHA	1.3°/S DEG
LONG	42.54 DEG		357.20 DEG		-6.90 DEG

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 0..06 DEG	AB 54.6 KM	A LAT -0..34 DEG	AB 22.9
B LONG 43..48 DEG	BC 47.4 KM	A LONG 42..86 DEG	BC 5..9
C LAT -1..54 DEG	CD 49.9 KM	B LAT -1..10 DEG	CD 22.7
D LONG 43..53 DEG	DA 39.5 KM	B LONG 42..83 DEG	DA 5..4
TILT DISTANCE		C LAT -1..08 DEG	TILT DIST
C LONG 41..97 DEG	18.9	C LONG 42..63 DEG	43.9
D LAT 0..10 DEG		D LAT -0..33 DEG	
D LONG 42..17 DEG		D LONG 42..66 DEG	

MISSION /
TEAM NO.:

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL PNT.
ALT	59.45 KH	TILT ANG 1.04 DEG	SUN AZIM 87.95 DEG
ALT RT	0.0311 KH/SEC	TILT AZIM 314.04 DEG	INCID ANG 62.39 DEG
LAT	-0.72 DEG	SWING ANG 121.70 DEG	EMISS ANG 1.07 DEG
LONG	40.85 DEG	N.DEV. 347.67 DEG	PHASE ANG 61.64 DEG

MEDIUM RESOLUTION		HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	CORNER	COORDINATE	SIDE LENGTH
A LAT	"0.067 DEG	AB 48.3 KM	A LAT	-0.37 DEG	AB 21.4 KM
A LONG	41.67 DEG	BC 40.9 KM	A LONG	0.99 DEG	BC 5.4 KM
B LAT	-1.61 DEG	CD 48.8 KM	B LAT	-1.06 DEG	CD 21.4 KM
B LONG	41.32 DEG	DA 41.2 KM	B LONG	0.84 DEG	DA 5.4 KM
C LAT	-1.33 DEG ..	TILT DISTANCE	C LAT	-1.02 DEG	TILT DISTANCE
C LONG	40.00 DEG	1.4	C LONG	0.67 DEG	11.0
D LAT	0.24 DEG		D LAT	-0.33 DEG	
D LONG	40.34 DEG		D LONG	0.82 DEG	

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MISSION/
FRAME NO.

1053 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY HR.MI.SEC 660622 ALT 59.47 KM TILT ANG 0.92 DEG SUN AZIM 87.92 DEG LATITUDE -9.73 DEG
 ALT RT 0.0135 KM/SEC TILT AZIM 318.90 DEG INCID ANG 62.24 DEG LONGITUDE 40.98 DEG
 LAT -0.75 DEG SWING ANG 126.56 DEG EMISS ANG 0.95 DEG
 LONG 41.00 DEG N.DEV. 347.67 DEG PHASE ANG 61.54 DEG
 ALPHA 0.59 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT -0.09 DEG	AB 4.6.3 KM	A LAT -0.40 DEG	AB 21.4 KM	
A LONG 41.82 DEG	BC 40.9 KM	A LONG 41.14 DEG	BC 5.4 KM	
B LAT -1.65 DEG	CD 48.8 KM	B LAT -1.09 DEG	CD 21.4 KM	
B LONG 41.47 DEG	DA 41.2 KM	B LONG 40.99 DEG	DA 5.4 KM	
C LAT -1.37 DEG	TILT DISTANCE 1.2	C LAT -1.05 DEG	TILT DISTANCE	
C LONG 40.15 DEG		C LONG 40.81 DEG	9.7	
D LAT 0.21 DEG		D LAT -0.36 DEG		
D LONG 40.49 DEG		D LONG 40.97 DEG		

MISSION/
FRAME NO.

1054 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY HR.MI.SEC 660622 ALT 59.51 KM TILT ANG 0.80 DEG SUN AZIM 87.90 DEG LATITUDE -0.76 DEG
 ALT RT 0.0135 KM/SEC TILT AZIM 325.19 DEG INCID ANG 62.09 DEG LONGITUDE 41.13 DEG
 LAT -0.78 DEG SWING ANG 132.86 DEG EMISS ANG 0.83 DEG
 LONG 41.14 DEG N.DEV. 347.67 DEG PHASE ANG 61.64 DEG
 ALPHA 0.44 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT -0.12 DEG	AB 4.8.4 KM	A LAT -0.43 DEG	AB 21.4 KM	
A LONG 41.97 DEG	BC 40.9 KM	A LONG 41.29 DEG	BC 5.4 KM	
B LAT -1.68 DEG	CD 48.8 KM	B LAT -1.12 DEG	CD 21.4 KM	
B LONG 41.62 DEG	DA 41.3 KM	B LONG 41.14 DEG	DA 5.4 KM	
C LAT -1.40 DEG	TILT DISTANCE 1.1	C LAT -1.08 DEG	TILT DISTANCE	
C LONG 40.30 DEG		C LONG 40.96 DEG	8.5	
D LAT 0.18 DEG		D LAT -0.39 DEG		
D LONG 40.64 DEG		D LONG 41.11 DEG		

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MISSION/
FRAME NO.

1055 TIME: 660622.
YR, MO, DY HR, MI, SEC 1523 5.73
 S/C POSITION ALT 59.54 KM
ALT RT 0.0148 KM/SEC
LAT -0.81 DEG
LONG 41.29 DEG
 S/C ORIENTATION TILT ANG 0.70 DEG
TILT AZIM 333.45 DEG
SWING ANG 141.12 DEG
N.DEV. 347.67 DEG
 PHASE ANG 61.64 DEG
ALPHA .30 DEG.

HIGH RESOLUTION

MISSION/
FRAME NO.

MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1055	660622. YR, MO, DY HR, MI, SEC 1523 5.73	ALT 59.54 KM ALT RT 0.0148 KM/SEC LAT -0.81 DEG LONG 41.29 DEG	TILT ANG 0.70 DEG TILT AZIM 333.45 DEG SWING ANG 141.12 DEG N.DEV. 347.67 DEG	SUN AZIM 87.88 DEG INCID ANG 61.94 DEG EMISS ANG. 0.73 DEG PHASE ANG 61.64 DEG ALPHA .30 DEG.	LATITUDE -0.79 DEG LONGITUDE 41.27 DEG

CORNER COORDINATE SIDE LENGTH

CORNER COORDINATE	SIDE LENGTH
A LAT -0.15 DEG	AB 48.5 KM
A LONG 42.12 DEG	BC 41.0 KM
B LAT -1.71 DEG	CD 48.7 KM
B LONG 41.77 DEG	DA 41.3 KM
C LAT -1.43 DEG	TILT DISTANCE 0.9
C LONG 40.45 DEG	
D LAT 0.15 DEG	
D LONG 40.79 DEG	

CORNER COORDINATE SIDE LENGTH

CORNER COORDINATE	SIDE LENGTH
A LAT -0.46 DEG	AB 21.4 KM
A LONG 41.44 DEG	BC 5.4 KM
B LAT -1.15 DEG	CD 21.5 KM
B LONG 41.29 DEG	DA 5.4 KM
C LAT -1.12 DEG	TILT DISTANCE 7.4
C LONG 41.11 DEG	
D LAT -0.42 DEG	
D LONG 41.26 DEG	

MISSION/
FRAME NO.

1056 TIME: 660622.
YR, MO, DY HR, MI, SEC 1523 8.15
 S/C POSITION ALT 59.58 KM
ALT RT 0.0160 KM/SEC
LAT -0.84 DEG
LONG 41.43 DEG
 S/C ORIENTATION TILT ANG 0.62 DEG
TILT AZIM 344.15 DEG
SWING ANG 151.82 DEG
N.DEV. 347.67 DEG
 PHASE ANG 61.64 DEG
ALPHA .15 DEG.

HIGH RESOLUTION

MISSION/
FRAME NO.

MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1056	660622. YR, MO, DY HR, MI, SEC 1523 8.15	ALT 59.58 KM ALT RT 0.0160 KM/SEC LAT -0.84 DEG LONG 41.43 DEG	TILT ANG 0.62 DEG TILT AZIM 344.15 DEG SWING ANG 151.82 DEG N.DEV. 347.67 DEG	SUN AZIM 87.86 DEG INCID ANG 61.79 DEG EMISS ANG 0.64 DEG PHASE ANG 61.64 DEG ALPHA .15 DEG	LATITUDE -0.82 DEG LONGITUDE 41.42 DEG

CORNER COORDINATE SIDE LENGTH

CORNER COORDINATE	SIDE LENGTH
A LAT -0.49 DEG	AB 21.5 KM
A LONG 41.59 DEG	BC 5.4 KM
B LAT -1.19 DEG	CD 21.5 KM
B LONG 41.43 DEG	DA 5.4 KM
C LAT -1.15 DEG	TILT DISTANCE 6.6
C LONG 41.26 DEG	
D LAT -0.45 DEG	
D LONG 41.41 DEG	

HIGH RESOLUTION

MISSION/
FRAME NO.

MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1056	660622. YR, MO, DY HR, MI, SEC 1523 8.15	ALT 59.58 KM ALT RT 0.0160 KM/SEC LAT -0.84 DEG LONG 41.43 DEG	TILT ANG 0.62 DEG TILT AZIM 344.15 DEG SWING ANG 151.82 DEG N.DEV. 347.67 DEG	SUN AZIM 87.86 DEG INCID ANG 61.79 DEG EMISS ANG 0.64 DEG PHASE ANG 61.64 DEG ALPHA .15 DEG	LATITUDE -0.82 DEG LONGITUDE 41.42 DEG

CORNER COORDINATE SIDE LENGTH

CORNER COORDINATE	SIDE LENGTH
A LAT -0.49 DEG	AB 21.5 KM
A LONG 41.59 DEG	BC 5.4 KM
B LAT -1.19 DEG	CD 21.5 KM
B LONG 41.43 DEG	DA 5.4 KM
C LAT -1.15 DEG	TILT DISTANCE 6.6
C LONG 41.26 DEG	
D LAT -0.45 DEG	
D LONG 41.41 DEG	

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MISSION/
FRAME NO.

1057 TIME 660622
YR, MO, DY 152310.57
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	59.62 KM	TILT ANG 0.57 DEG	SUN AZIM 87.84 DEG	LATITUDE -0.85 DEG
ALT RT	0.0172 KM/SEC	TILT AZIM 357.44 DEG	INCID ANG 61.65 DEG	LONGITUDE 41.57 DEG
LAT	-0.87 DEG	SWING ANG 165.12 DEG	EMISS ANG 0.59 DEG	
LONG	-41.57 DEG	N.DEV. 347.67 DEG	PHASE ANG 61.64 DEG	
			ALPHA ... 0.00 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -0.21 DEG	AB 48.6 KM	CORNER COORDINATE SIDE LENGTH
A LONG 42.42 DEG	BC 41.0 KM	A LAT -0.452 DEG AB 21.5 KM
B LAT -1.78 DEG	CD 48.7 KM	A LONG 41.74 DEG BC 5.4 KM
B LONG 42.07 DEG	DA 41.3 KM	B LAT -1.22 DEG CD 21.5 KM
C LAT -1.49 DEG	TILT DISTANCE 0.7	B LONG 41.58 DEG DA 5.4 KM
C LONG 40.75 DEG		C LAT -1.18 DEG TILT DISTANCE 6.0
D LAT 0.08 DEG		C LONG 41.41 DEG 6.0
D LONG 41.09 DEG		D LAT -0.49 DEG
		D LONG 41.56 DEG ALPHA -0.415 DEG

MISSION/
FRAME NO.

1058 TIME 660622
YR, MO, DY 152313.00
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	59.66 KM	TILT ANG 0.55 DEG	SUN AZIM 87.81 DEG	LATITUDE -0.89 DEG
ALT RT	0.0185 KM/SEC	SWING ANG 180.26 DEG	INCID ANG 61.50 DEG	LONGITUDE 41.72 DEG
LAT	-0.90 DEG	N.DEV. 347.68 DEG	EMISS ANG 0.57 DEG	
LONG	-41.72 DEG		PHASE ANG 61.64 DEG	
			ALPHA ... -0.415 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -0.24 DEG	AB 48.7 KM	CORNER COORDINATE SIDE LENGTH
A LONG 42.57 DEG	BC 41.0 KM	A LAT -0.456 DEG AB 21.5 KM
B LAT -1.81 DEG	CD 48.7 KM	A LONG 41.89 DEG BC 5.4 KM
B LONG 42.22 DEG	DA 41.4 KM	B LAT -1.25 DEG CD 21.5 KM
C LAT -1.53 DEG	TILT DISTANCE 0.7	B LONG 41.73 DEG DA 5.4 KM
C LONG 40.50 DEG		C LAT -1.21 DEG TILT DISTANCE 5.8
D LAT 0.05 DEG		C LONG 41.56 DEG 5.8
D LONG 41.24 DEG		D LAT -0.52 DEG
		D LONG 41.71 DEG

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INDUSTRIE

PRINCIPAL POINT	PHOTO ILLUMINATION	SUN AZIM.	SUN DEG	LATITUDE	-0° 92' DEG
		INCID ANG	61° 35' DEG	LONGITUDE	41° 87' DEG
		EMISS ANG	0° 59' DEG		
		PHASE ANG	61° 64' DEG		
		ALPHA	-0° 36' DEG		
S/C POSITION	S/C ORIENTATION	TILT ANG	0° 57' DEG	CEG	
TIME		TILT AZIM	27° 71' DEG	CEG	
YR:MO:DY	ALT	SWING ANG	195° 40' DEG	CEG	
HR:MI:SEC	ALT RT	N.DEV.	347° 66' DEG	CEG	
	LAT				
	LONG				

MEDIUM RESOLUTION		SIDE RESOLUTION
CORNER	COORDINATE	
A LAT	-C.27 DEG	AB 48.8
A LONG	B.72 DEG	BC 41.4
B LAT	-1.85 DEG	CD 48.7
B LONG	42.37 DEG	DA 41.4
C LAT	-1.56 DEG	TILT DIST.
C LONG	41.05 DEG	0.8
D LAT	Q.02 DEG	
D LONG	41.39 DEG	

HIGH RESOLUTION'		SIDE
CORNER	COORDINATE	
A LAT	-0.59 DEG	AB 2
A LONG	42.04 DEG	BC
B LAT	-1.28 DEG	CD 2
B LONG	41.88 DEG	DA
C LAT	-1.24 DEG	TILT
C LONG	41.71 DEG	
D LAT	-0.55 DEG	
D LONG	41.86 DEG	

	YR, MO, DY	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
0	HR, MI, SEC	660522	ALT RT 0.0209 KM/SEC	TILT ANG 0 • 63 • DEG TILT AZIM 40 • 92 • DEG	SUN AZIM 87 • 77 • DEG INCID ANG 61 • 20 • DEG	LATITUDE -0 • 95 • DEG
		152317.88	LAT -0 • 97 DEG	SWING ANG 208 • 61 DEG	EMISS ANG 0 • 65 DEG	LONGITUDE 42 • 02 • DEG
			LONG 42 • 01 DEG	N.DEV. 347 • 68 DEG	PHASE ANG 61 • 64 DEG	
				ALPHA -0 • 45 DEG		

HIGH RESOLUTION		MEDIUM RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -0.30 DEG	AB 48.9 KM	A LAT -0.62 DEG	AB 21.5 KM
A LONG 42.68 DEG	BC 41.1 KM	A LONG 42.19 DEG	BC 5.4 KM
B LAT -1.88 DEG	CD 48.7 KM	B LAT -1.32 DEG	CD 21.5 KM
B LONG 42.53 DEG	DA 41.4 KM	B LONG 42.03 DEG	DA 5.4 KM
C LAT ~1.59 DEG	TILT DISTANCE 0.8	C LAT ~1.28 DEG	TILT DISTANC 6.6
C LONG 41.20 DEG		C LONG 41.86 DEG	
D LAT -0.02 DEG		D LAT -0.58 DEG	
D LONG 41.54 DEG		D LONG 42.01 DEG	

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MISSION/
FRAME NO.1061
YR-MO-DY
HR-MI-SECTIME
660622
152320.32S/C POSITION
ALT RT 59.81 KM
LAT -1.00 DEG
LONG 42.15 DEGS/C ORIENTATION
TILT ANG 0.71 DEG
TILT AZIM 51.49 DEG
SWING ANG 219.17 DEG
N.DEV. 347.69 DEGPHOTO ILLUMINATION
SUN AZIM 87.74 DEG
INCID ANG 61.05 DEG
EMISS ANG 0.74 DEG
PHASE ANG 61.64 DEG
ALPHA -0.60 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.34 DEG	AB 49.0 KM
A LONG 43.03 DEG	BC 41.1 KM
B LAT -1.32 DEG	CD 48.7 KM
B LONG 42.68 DEG	DA 41.5 KM
C LAT -1.62 DEG	TILT DISTANCE 1.0
C LONG 41.25 DEG	
D LAT -0.05 DEG	
D LONG 41.69 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.65 DEG	AB 21.6 KM
A LONG 42.34 DEG	BC 5.4 KM
B LAT -1.35 DEG	CD 21.5 KM
B LONG 42.18 DEG	DA 5.4 KM
C LAT -1.31 DEG	TILT DISTANCE
C LONG 42.01 DEG	7.5
D LAT -0.61 DEG	
D LONG 42.16 DEG	

MISSION/
FRAME NO.1062
YR-MO-DY
HR-MI-SECTIME
660622
152322.77S/C POSITION
ALT RT 59.87 KM
LAT -1.03 DEG
LONG 42.30 DEGS/C ORIENTATION
TILT ANG 0.81 DEG
TILT AZIM 59.63 DEG
SWING ANG 227.32 DEG
N.DEV. 347.59 DEGPHOTO ILLUMINATION
SUN AZIM 87.72 DEG
INCID ANG 69.90 DEG
EMISS ANG 0.84 DEG
PHASE ANG 61.64 DEG
ALPHA -0.74 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.37 DEG	AB 49.1 KM
A LONG 43.18 DEG	BC 41.2 KM
B LAT -1.95 DEG	CD 48.7 KM
B LONG 42.83 DEG	DA 41.5 KM
C LAT -1.65 DEG	TILT DISTANCE 1.1
C LONG 41.50 DEG	
D LAT -0.08 DEG	
D LONG 41.84 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.68 DEG	AB 21.6 KM
A LONG 42.49 DEG	BC 5.4 KM
B LAT -1.38 DEG	CD 21.6 KM
B LONG 42.34 DEG	DA 5.4 KM
C LAT -1.34 DEG	TILT DISTANCE
C LONG 42.16 DEG	8.6
D LAT -0.65 DEG	
D LONG 42.31 DEG	

PHOTO ILLUMINATION
SUN AZIM 87.74 DEG
INCID ANG 61.05 DEG
EMISS ANG 0.74 DEG
PHASE ANG 61.64 DEGPRINCIPAL POINT
LATITUDE -0.98 DEG
LONGITUDE 42.17 DEGPHOTO ILLUMINATION
SUN AZIM 87.72 DEG
INCID ANG 69.90 DEG
EMISS ANG 0.84 DEG
PHASE ANG 61.64 DEGPRINCIPAL POINT
LATITUDE -1.01 DEG
LONGITUDE 42.32 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	TIME: YR-MO-DY HR-MI-SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION 59.92 KM 0.0247 KM/SEC -1.06 DEG 42.45 DEG	PHOTO ILLUMINATION SUN AZIM 87.70 DEG TILT ANG 60.75 DEG INCID ANG 65.88 DEG SWING ANG 233.57 DEG EMISS ANG 0.96 DEG N.S.BEV. -347.69 DEG	PRINCIPAL POINT LATITUDE -1.05 DEG LONGITUDE 42.48 DEG
MEDIUM RESOLUTION					
MISSION/ FRAME NO.	TIME: YR-MO-DY HR-MI-SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION 59.99 KM 0.0259 KM/SEC -1.09 DEG 42.59 DEG	PHOTO ILLUMINATION SUN AZIM 87.67 DEG TILT ANG 70.69 DEG INCID ANG 70.69 DEG SWING ANG 238.38 DEG EMISS ANG 1.09 DEG N.DEV. 347.69 DEG	PRINCIPAL POINT LATITUDE -1.08 DEG LONGITUDE 42.63 DEG
1063	660622 152325.23	ALT RT LAT LONG	59.99 KM 0.0259 KM/SEC -1.09 DEG 42.59 DEG	SUN AZIM 87.70 DEG TILT ANG 60.75 DEG INCID ANG 65.88 DEG SWING ANG 233.57 DEG EMISS ANG 0.96 DEG N.S.BEV. -347.69 DEG	LATITUDE -1.05 DEG LONGITUDE 42.48 DEG
HIGH RESOLUTION					
MISSION/ FRAME NO.	TIME: YR-MO-DY HR-MI-SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION 59.99 KM 0.0259 KM/SEC -1.09 DEG 42.59 DEG	PHOTO ILLUMINATION SUN AZIM 87.67 DEG TILT ANG 70.69 DEG INCID ANG 70.69 DEG SWING ANG 238.38 DEG EMISS ANG 1.09 DEG N.DEV. 347.69 DEG	PRINCIPAL POINT LATITUDE -1.08 DEG LONGITUDE 42.63 DEG
1064	660622 152327.69	ALT RT LAT LONG	59.99 KM 0.0259 KM/SEC -1.09 DEG 42.59 DEG	SUN AZIM 87.70 DEG TILT ANG 60.75 DEG INCID ANG 65.88 DEG SWING ANG 233.57 DEG EMISS ANG 0.96 DEG N.DEV. 347.69 DEG	LATITUDE -1.05 DEG LONGITUDE 42.48 DEG
MEDIUM RESOLUTION					
MISSION/ FRAME NO.	TIME: YR-MO-DY HR-MI-SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION 59.99 KM 0.0259 KM/SEC -1.09 DEG 42.59 DEG	PHOTO ILLUMINATION SUN AZIM 87.67 DEG TILT ANG 70.69 DEG INCID ANG 70.69 DEG SWING ANG 238.38 DEG EMISS ANG 1.09 DEG N.DEV. 347.69 DEG	PRINCIPAL POINT LATITUDE -1.08 DEG LONGITUDE 42.63 DEG
1064	660622 152327.69	ALT RT LAT LONG	59.99 KM 0.0259 KM/SEC -1.09 DEG 42.59 DEG	SUN AZIM 87.70 DEG TILT ANG 60.75 DEG INCID ANG 65.88 DEG SWING ANG 233.57 DEG EMISS ANG 0.96 DEG N.DEV. 347.69 DEG	LATITUDE -1.05 DEG LONGITUDE 42.48 DEG
HIGH RESOLUTION					
MISSION/ FRAME NO.	TIME: YR-MO-DY HR-MI-SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION 59.99 KM 0.0259 KM/SEC -1.09 DEG 42.59 DEG	PHOTO ILLUMINATION SUN AZIM 87.67 DEG TILT ANG 70.69 DEG INCID ANG 70.69 DEG SWING ANG 238.38 DEG EMISS ANG 1.09 DEG N.DEV. 347.69 DEG	PRINCIPAL POINT LATITUDE -1.08 DEG LONGITUDE 42.63 DEG
1064	660622 152327.69	ALT RT LAT LONG	59.99 KM 0.0259 KM/SEC -1.09 DEG 42.59 DEG	SUN AZIM 87.70 DEG TILT ANG 60.75 DEG INCID ANG 65.88 DEG SWING ANG 233.57 DEG EMISS ANG 0.96 DEG N.DEV. 347.69 DEG	LATITUDE -1.05 DEG LONGITUDE 42.48 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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84/1071

MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1065	660822 YR.MD.DY HR.MI.SEC	ALT 152330.15	ALT RT 0.0222 LAT -1.12 LONG 42.74	TILT ANG 1.19 TILT AZIM 74.46 SWING ANG 242.16 N.DEV. 347.70	SUN AZIM 87.65 DEG INCID ANG 60.45 DEG EMISS ANG 1.23 DEG PHASE ANG 61.64 DEG ALPHA -1.20 DEG
					HIGH RESOLUTION CORNER COORDINATE A LAT -0.78 DEG A LONG 42.94 DEG B LAT -1.48 DEG B LONG 42.79 DEG C LAT -1.44 DEG C LONG 42.62 DEG D LAT -0.74 DEG D LONG 42.77 DEG
					MEDIUM RESOLUTION CORNER COORDINATE A LAT -0.46 DEG A LONG 43.64 DEG B LAT -2.05 DEG B LONG 43.29 DEG C LAT -1.75 DEG C LONG 41.96 DEG D LAT -0.18 DEG D LONG 42.29 DEG
					SIDE LENGTH AB 4.94 KM BC 41.3 KM CD 48.7 KM DA 41.7 KM TIKT DISTANCE 1.6

ISSN 1551-1

TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
	ALT	ALT RT	KM	TILT ANG	TILT AZIM	DEG	SUN AZIM	INCID ANG	DEG	LATITUDE	LONGITUDE	DEG
660E22	60.112		KM	1.32	77.48	DEG	87.62	60.30	DEG	-1.14	42.93	DEG
152332.62	0.0285	KM/SEC		245.16	247.70	DEG	EMISS ANG	1.37	DEG			
	LAT	-1.15	DEG	PHASE ANG	61.64	DEG						
	LONG	42.89	DEG	ALPHA	-1.35	DEG						
	N.DEV.											

MEDIUM RESOLUTION			HIGH RESOLUTION		
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	-0.49 DEG	AB	49.5 KM	A LAT	-0.81 DEG
A LONG	43.680 DEG	BC	41.4 KM	A LONG	43.10 DEG
B LAT	-2.09 DEG	CD	48.7 KM	B LAT	-1.51 DEG
B LONG	43.444 DEG	DA	41.7 KM	B LONG	42.94 DEG
C LAT	-1.78 DEG	TILT DISTANCE		C LAT	-1.47 DEG
C LONG	42.11 DEG	1.8		C LONG	42.77 DEG
D LAT	-0.21 DEG			D LAT	-0.77 DEG
D LONG	42.45 DEG			D LONG	42.92 DEG
G LONG					

LUNAR OBSITES PHOTOGRAPHIC SUPPORTING DATA

LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	666222	TILT ANG 1.46 DEG	SUN AZIM 87.60 DEG	LATITUDE -1.18 DEG
DAY	ALT 60.19 KM	TILT AZIM 79.93 DEG	INCID ANG 60.15 DEG	LONGITUDE 43.08 DEG
.SEC	152335.09	SWING ANG 247.64 DEG	EMISS ANG 1.51 DEG	
	ALT RT 0.3297 KM/SEC	N.DEV. 347.71 DEG	PHASE ANG 61.84 DEG	
	LAT -1.19 DEG			ALPHA -1.50 DEG
	LONG 43.03 DEG			

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A	LAT -0°52 DEG	AB 49.6
A	LONG 43°55 DEG	BC 41.4
B	LAT -2°12 DEG	CD 48.7
B	LONG 43°60 DEG	DA 41.8
C	LAT -1°82 DEG	TILT DIST
C	LONG 42°26 DEG	2.0
D	LAT -0°24 DEG	
D	LONG 42°60 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	-9.84 DEG	AB
A LONG	43.25 DEG	BC
E LAT	-1.55 DEG	CD
B LONG	43.10 DEG	DA
C LAT	-1.51 DEG	TIL
C LONG	42.92 DEG	
D LAT	-0.81 DEG	
D LONG	43.07 DEG	

MISSION /
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL PLANE
ALT RT LAT LONG	KH KM/SEC DEG DEG	TILT TILT AZIM SWING ANG N.DEV.	SUN AZIM .INCL ANG EMISS ANG PHASE ANG
58.69 -0.0276 0.424 34.49	1.46 289.06 96.44 347.39	DEG DEG DEG DEG	88.48 DEG 65.98 ORG 1.50 DEG 65.57 DEG
			LATITUDE LONGITUDE
			0.25 DEG 34.44 DEG

NEUTRON RESOLUTION		SIDE	LENGTH
CORNER COORDINATE	ANGLE	AB	47°.5 KM
A LAT	0°.87 DEG	BC	40°.5 KM
A LONG	35°.27 DEG	CD	48°.4 KM
B LAT	-0°.66 DEG	DA	40°.6 KM
B LONG	32°.52 DEG	TILT DISTANCE	2.0
C LAT	-C°.38 DEG		
C LONG	33°.61 DEG		
D LAT	1°.18 DEG		
D LONG	33°.56 DEG		

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	0.58 DEG	AB
A LONG	34-60 DEG	BC
B LAT	-0.11 DEG	CD
B LONG	34-45 DEG	DA
C LAT	-0.07 DEG	TIL 1
C LONG	34-28 DEG	
D LAT	0.62 DEG	
D LONG	34-43 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.1069
YR. MO. DY
HR. MI. SECTIME
660622
105047.51
S/C POSITION
ALT 58.63 KM
ALT RT -0.0264 KM/SEC
LAT 0.21 DEG
LONG 34.63 DEG
N.DEV. 347.39 DEGS/C ORIENTATION
TILT ANG 1.31 DEG
TILT AZIM 289.83 DEG
SWING ANG 97.21 DEG
EMISS ANG 1.35 DEG
PHASE ANG 65.57 DEG
ALPHA 1.26 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.84 DEG AB 47.5 KM
A LONG 35.42 DEG BC 40.5 KM
B LAT -0.69 DEG CD 48.3 KM
B LONG 25.07 DEG DA 43.6 KM
C LAT -0.41 DEG TILT DISTANCE 1.8
C LONG 33.76 DEG
D LAT 1.15 DEG
D LONG 34.11 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.54 DEG AB 21.1 KM
A LONG 34.75 DEG BC 5.3 KM
B LAT -0.14 DEG CD 21.1 KM
B LONG 34.60 DEG DA 5.3 KM
C LAT -0.10 DEG TILT DISTANCE
C LONG 34.43 DEG 13.9
D LAT 0.58 DEG
D LONG 34.58 DEGMISSION/
FRAME NO.1070
YR. MO. DY
HR. MI. SECTIME
660622
105049.91
S/C POSITION
ALT 58.57 KM
ALT RT -0.0251 KM/SEC
LAT 0.18 DEG
LONG 34.77 DEG
N.DEV. 347.39 DEG
ALPHA 1.11 DEGS/C ORIENTATION
TILT ANG 1.17 DEG
TILT AZIM 290.80 DEG
SWING ANG 98.18 DEG
EMISS ANG 1.20 DEG
PHASE ANG 65.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.81 DEG AB 47.5 KM
A LONG 35.56 DEG BC 40.4 KM
B LAT -0.72 DEG CD 48.2 KM
B LONG 35.22 DEG DA 40.5 KM
C LAT -0.44 DEG TILT DISTANCE 1.6
C LONG 33.91 DEG
D LAT 1.11 DEG
D LONG 34.26 DEGCORNER COORDINATE SIDE LENGTH
A LAT 0.51 DEG AB 21.1 KM
A LONG 34.90 DEG BC 5.3 KM
B LAT -0.17 DEG CD 21.1 KM
B LONG 34.75 DEG DA 5.3 KM
C LAT -0.13 DEG TILT DISTANCE 12.3
C LONG 34.57 DEG
D LAT 0.55 DEG
D LONG 34.73 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.54 DEG AB 21.1 KM
A LONG 34.75 DEG BC 5.3 KM
B LAT -0.14 DEG CD 21.1 KM
B LONG 34.60 DEG DA 5.3 KM
C LAT -0.10 DEG TILT DISTANCE
C LONG 34.43 DEG 13.9
D LAT 0.58 DEG
D LONG 34.58 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION

FRAME NO.

1071

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

ALT 58.51 KM

ALT RT -0.0239 KM/SEC

LAT 0.15 DEG

LONG 34.92 DEG

N.DEV. 347.39 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0°78 DEG AB 47.5 KM

A LONG 35°71 DEG BC 40.4 KM

B LAT -0°75 DEG CD 48.1 KM

B LONG 35°37 DEG DA 40.5 KM

C LAT -0°47 DEG TILT DISTANCE 1.4

C LONG 34.06 DEG

D LAT 1°08 DEG

D LONG 34.41 DEG

S/C ORIENTATION

TILT ANG 1.32 DEG

TIILT AZIM 292.05 DEG

SWING ANG 99.43 DEG

N.DEV. 347.39 DEG

PHASE ANG 65.57 DEG

EMISS ANG 1.06 DEG

INCID ANG 66.54 DEG

PHASE ANG 65.57 DEG

SUN AZIM 88.43 DEG

EMISS ANG 0.16 DEG

INCID ANG 66.54 DEG

PHASE ANG 65.57 DEG

PHOTO ILLUMINATION

SUN AZIM 88.43 DEG

EMISS ANG 0.16 DEG

INCID ANG 66.54 DEG

PHASE ANG 65.57 DEG

PRINCIPAL POINT

LATITUDE 0.16 DEG

LONGITUDE 34.88 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0°48 DEG AB 21.1 KM

A LONG 35.05 DEG BC 5.3 KM

B LAT -0°20 DEG CD 21.1 KM

B LONG 34.89 DEG DA 5.3 KM

C LAT -0.16 DEG TILT DISTANCE 10.8

C LONG 34.72 DEG

D LAT 0.52 DEG

D LONG 34.87 DEG

S/C POSITION

ALT 58.45 KM

ALT RT -0.0227 KM/SEC

LAT 0.12 DEG

LONG 35.06 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0°45 DEG AB 21.0 KM

A LONG 35.19 DEG BC 5.3 KM

B LAT -0°25 DEG CD 21.1 KM

B LONG 35.04 DEG DA 5.3 KM

C LAT -0.19 DEG TILT DISTANCE 9.3

C LONG 34.87 DEG

D LAT 0.49 DEG

D LONG 35.02 DEG

S/C ORIENTATION

TILT ANG 0.88 DEG

TIILT AZIM 293.70 DEG

SWING ANG 101.08 DEG

N.DEV. 347.39 DEG

PHOTO ILLUMINATION

SUN AZIM 88.42 DEG

EMISS ANG 0.13 DEG

INCID ANG 66.39 DEG

PHASE ANG 65.57 DEG

PRINCIPAL POINT

LATITUDE 0.13 DEG

LONGITUDE 35.03 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0°45 DEG AB 21.0 KM

A LONG 35.19 DEG BC 5.3 KM

B LAT -0°25 DEG CD 21.1 KM

B LONG 35.04 DEG DA 5.3 KM

C LAT -0.19 DEG TILT DISTANCE 9.3

C LONG 34.87 DEG

D LAT 0.49 DEG

D LONG 35.02 DEG

MISSION

FRAME NO.

1072

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

ALT 58.45 KM

ALT RT -0.0227 KM/SEC

LAT 0.12 DEG

LONG 35.06 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0°45 DEG AB 21.0 KM

A LONG 35.19 DEG BC 5.3 KM

B LAT -0°25 DEG CD 21.1 KM

B LONG 35.04 DEG DA 5.3 KM

C LAT -0.19 DEG TILT DISTANCE 9.3

C LONG 34.87 DEG

D LAT 0.49 DEG

D LONG 35.02 DEG

S/C ORIENTATION

TILT ANG 0.88 DEG

TIILT AZIM 293.70 DEG

SWING ANG 101.08 DEG

N.DEV. 347.39 DEG

PHOTO ILLUMINATION

SUN AZIM 88.42 DEG

EMISS ANG 0.13 DEG

INCID ANG 66.39 DEG

PHASE ANG 65.57 DEG

PRINCIPAL POINT

LATITUDE 0.13 DEG

LONGITUDE 35.03 DEG

LUNAR UNEVEN PHOTOGRAHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER
04/10/71

MESSAGE

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	58.49 KM	TILT ANG 0.73 DEG	SUN AZIM 68.40 DEG
ALT RT	-0.0215 KM/SEC	TILT AZIM 295.00 DEG	INCID ANG 66.24 DEG
LAT	0.09 DEG	SWING ANG 123.38 DEG	FMISS ANG 5.75 DEG
LONG	35.23 DEG	N.DEV. 347.38 DEG	PHASE ANG 65.57 DEG
			ALPHA 0.87 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	0.71 DEG	AB 47.5
A LONG	36.01 DEG	BC 40.3
B LAT	-0.82 DEG	CD 47.9
B LONG	35.66 DEG	DA 40.4
C LAT	-6.33 DEG	TILT DIST
C LONG	34.36 DEG	1.0
D LAT	1.01 DEG	
D LONG	34.71 DEG	

HIGH RESOLUTION		SIDE 1
CORNER	COORDINATE	
A LAT	0.42 DEG	AB
A LONG	35.34 DEG	BC
B LAT	-0.26 DEG	CD
B LONG	35.19 DEG	DA
C LAT	-0.22 DEG	TILT D
C LONG	35.02 DEG	
D LAT	0.45 DEG	
D LONG	35.17 DEG	

MISSION /

TIME 660E2
FRAME NO. 1074 YR. MO. DY.

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 0-59 DEG	SUN AZIM 88-39 DEG	LATITUDE 0-06 DEG
TIILT AZIM 299-40 DEG	INCID ANG 66-10 DEG	LONGITUDE 35-33 DEG
SWING ANG 106-79 DEG	ENISS ANG 0-61 DEG	
N.DEV.	PHASE ANG 65-57 DEG	
347-38 DEG	ALPHA 0-52 DEG	

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	0°-68 DEG	AB 47.5 KM
A LONG	36°-16 DEG	BC 40.2 KM
B LAT	-0°-85 DEG	CD 47.8 KM
B LONG	135°-51 DEG	DA 40.3 KM
C LAT	-0°-51 DEG	TILT DISTANCE 0.8
C LONG	34°-51 DEG	
D LAT	0°-98 DEG	
D LONG	34°-86 DEG	

CORNER	HIGH RESOLUTI
A LAT	0.38 DEG
A LONG	35.49 DEG
B LAT	-0.29 DEG
B LONG	35.34 DEG
C LAT	-0.26 DEG
C LONG	35.17 DEG
D LAT	0.42 DEG
D LONG	35.13 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

1075

YR, MO, DY

1971

HR, MI, SEC

1051 1.91

S/C POSITION
 ALT 58.30 KM
 ALT RT -0.0190 KM/SEC
 LAT -0.02 DEG
 LONG 35.49 DEG

S/C ORIENTATION
 TILT ANG 0.45 DEG
 TILT AZIM 30A.90 DEG
 SWING ANG 112.29 DEG
 N.DEV. 347.38 DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	0.65 DEG	AB 47.5 KM
A LONG	36.30 DEG	BC 4.0.2 KM
B LAT	-0.88 DEG	CD 47.7 KM
B LONG	35.66 DEG	DA 40.3 KM
C LAT	-0.59 DEG	TILT DISTANCE 0.6
C LONG	34.66 DEG	
D LAT	0.95 DEG	
D LONG	35.31 DEG	

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	0.35 DEG	AB 21.0 KM
A LONG	35.64 DEG	BC 5.3 KM
B LAT	-0.33 DEG	CD 21.0 KM
B LONG	35.48 DEG	DA 5.3 KM
C LAT	-0.29 DEG	TILT DISTANCE 4.8
C LONG	35.31 DEG	
D LAT	0.39 DEG	
D LONG	35.47 DEG	

MISSION/

FRAME NO.

1076

YR, MO, DY

1971

HR, MI, SEC

1051 4.31

S/C POSITION
 ALT 58.26 KM
 ALT RT -0.0178 KM/SEC
 LAT -0.01 DEG
 LONG 35.63 DEG

S/C ORIENTATION
 TILT ANG 0.32 DEG
 TILT AZIM 314.98 DEG
 SWING ANG 112.36 DEG
 N.DEV. 347.38 DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	0.62 DEG	AB 47.5 KM
A LONG	36.45 DEG	BC 4.0.2 KM
B LAT	-0.91 DEG	CD 47.6 KM
B LONG	36.11 DEG	DA 40.3 KM
C LAT	-0.52 DEG	TILT DISTANCE 0.4
C LONG	34.81 DEG	
D LAT	0.51 DEG	
D LONG	35.15 DEG	

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	0.32 DEG	AB 21.0 KM
A LONG	35.78 DEG	BC 5.3 KM
B LAT	-0.36 DEG	CD 21.0 KM
B LONG	35.63 DEG	DA 5.3 KM
C LAT	-0.32 DEG	TILT DISTANCE 3.4
C LONG	35.46 DEG	
D LAT	0.36 DEG	
D LONG	35.61 DEG	

PHOTO ILLUMINATION
 SUN AZIM: 88.36 DEG
 INCID ANG 65.80 DEG
 EMISS ANG 0.34 DEG
 PHASE ANG 65.57 DEG
 ALPHA 0.123 DEG

PRINCIPAL POINT
 LATITUDE -0.00 DEG
 LONGITUDE 35.82 DEG

LUNAR CRITERIA PHOTOGRAPHIC SUPPORTING DATA

FULL LIST GROERED BY MISSION AND FRAME NUMBER 94-11271

INDUSTRIE

		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME		ALT	58.22 KM	TILT ANG	0.22 DEG	SUN AZIM	88.34 DEG	LATITUDE	" 0.03 DEG
YR=NO.DY	660E22	ALT RT	-0.0166 KM/SEC	TILT AZIM	336.52 DEG	INCID ANG	65.65 DEG	LONGITUDE	35.77 DEG
HR:MI:SEC	1651 6.71	LAT	-0.04 DEG	SWING ANG	143.90 DEG	EMISS ANG	0.22 DEG		
		LONG	35.77 DEG	N.DEV.	347.38 DEG	PHASE ANG	65.57 DEG		

MEDIUM RESOLUTION					
	CORNER	COORDINATE	SIDE	LENGTH	
A	LAT	0.59 DEG	AB	47.5 KN	
A	LONG	36.60 DEG	BC	40.1 KN	
B	LAT	-0.64 DEG	CD	47.5 KN	
B	LONG	36.426 DEG	DA	40.2 KN	TILT DISTANCE
C	LAT	-0.65 DEG			G.3
C	LONG	34.56 DEG			
D	LAT	0.88 DEG			
D	LONG	36.30 DEG			

HIGH RESOLUTION			
CORNER	COORDINATE	SIG.	
A LAT	0.29 DEG	AB	
A LONG	35.93 DEG	BC	
B LAT	-0.39 DEG	CD	
B LONG	35.78 DEG	DA	
C LAT	-0.35 DEG	TII	
C LONG	35.61 DEG		
D LAT	0.23 DEG		
D LONG	35.76 DEG		

PHOTO ILLUMINATION	SUN AZIM	88.34 DEG	LATITUDE	"N.03 DEG	PRINCIPAL POINT
INCID ANG	65.65 DEG		LONGITUDE	35.77 DEG	
EMISS ANG	0.22 DEG				
PHASE ANG	65.57 DEG				
ALPHA	0.08 DEG				

HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	
A LAT	0°29 DEG	AB	21.0 KM
A LONG	35°.93 DEG	BC	5.3 KM
B LAT	-0°.39 DEG	CD	21.0 KM
B LONG	35°.78 DEG	DA	5.3 KM
C LAT	-0°.35 DEG	TILT	DISTANCE
C LONG	35°.61 DEG		2.3
D LAT	0°.23 DEG		
D LONG	35°.76 DEG		

MISSION,
FRANCE NO.

8	YR, MO, DY HR, MI, SEC	TIME	S/C POSITION	S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
				ALT	KM/SEC	ALT AZIM	0.18 DEG	SUN AZIM	88.32 DEG
18051 9.11	660522	1851 9.11	58.18 KM -0.0153	0.07 DEG	18.72 DEG	INCID ANG	65.51 DEG	LONGITUDE	35.92 DEG
			35.92 DEG	N.DEV.	SWING ANG 186.10 DEG	EMISS ANG	0.16 DEG		
					347.38 DEG	PHASE ANG	65.67 DEG		
						ALPHA	-0.05 DEG		

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	0.56 DEG	AB 47.5 KM
A LONG	36.75 DEG	BC 40.1 KM
B LAT	-0.97 DEG	CD 47.5 KM
B LONG	36.40 DEG	DA 40.2 KM
C LAT	-0.69 DEG	TIILT DISTANCE 0.2
C LONG	35.11 DEG	
D LAT	0.65 DEG	
D LONG	35.45 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	9°26' DEG	
A LONG	36°0.8 DEG	BC
B LAT	-0°42' DEG	CD
B LONG	35°53' DEG	DA
C LAT	-0°38' DEG	TIL
C LONG	36°76' DEG	
D LAT	0°29' DEG	
D LONG	35°31' DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	0°26 DEG	A8 21.0 KM
A LONG	36.08 DEG	BC 5.3 KM
B LAT	-0.42 DEG	CD 21.0 KM
B LONG	35.53 DEG	DA 5.3 KM
C LAT	-0.38 DEG	TILT DISTANCE
C LONG	36.76 DEG	1.8

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MISSION/

FRAME NO.

1079

YR.MD.DY

185111.51

HR.MI.SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 5B.14 KM	TILT ANG 0.24 DEG	SUN AZIM 88.31 DEG	LATITUDE -0.10 DEG
YR.MD.DY	ALT RT -0.0141 KM/SEC	TILT AZIM 55.56 DEG	INCID ANG 65.36 DEG	LONGITUDE 36.07 DEG
HR.MI.SEC	LAT -0.10 DEG	SWING ANG 222.94 DEG	EMISS ANG 0.25 DEG	
	LAT 36.06 DEG	N.DEV. 347.38 DEG	PHASE ANG 65.57 DEG	
			ALPHA -0.21 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 0.32 DEG	AB 4.75 KM	CORNER COORDINATE SIDE LENGTH
A LONG 36.90 DEG	BC 4.01 KM	A LAT 0.22 DEG AB 20.9 KM
B LAT -1.01 DEG	CD 4.74 KM	A LONG 36.23 DEG BC 5.3 KM
B LONG 36.55 DEG	DA 4.02 KM	B LAT -0.45 DEG CD 20.9 KM
C LAT -0.72 DEG	TIILT DISTANCE 0.3	B LONG 36.08 DEG DA 5.3 KM
C LONG 35.26 DEG		C LAT -0.41 DEG TILT DISTANCE 2.5
D LAT 0.81 DEG		C LONG 35.91 DEG
D LONG 35.60 DEG		D LAT 0.26 DEG
		D LONG 36.06 DEG

MISSION/

FRAME NO.

1080

YR.MD.DY

185113.91

HR.MI.SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 5B.11 KM	TILT ANG 0.36 DEG	SUN AZIM 88.29 DEG	LATITUDE -0.13 DEG
YR.MD.DY	ALT RT -0.0129 KM/SEC	TILT AZIM 72.77 DEG	INCID ANG 65.21 DEG	LONGITUDE 36.21 DEG
HR.MI.SEC	LAT -0.13 DEG	SWING ANG 240.15 DEG	EMISS ANG 0.37 DEG	
	LAT 36.20 DEG	N.DEV. 347.38 DEG	PHASE ANG 65.57 DEG	
			ALPHA -0.36 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 0.49 DEG	AB 4.75 KM	CORNER COORDINATE SIDE LENGTH
A LONG 37.05 DEG	BC 4.01 KM	A LAT 0.19 DEG AB 20.9 KM
B LAT -1.04 DEG	CD 4.73 KM	A LONG 36.37 DEG BC 5.3 KM
B LONG 36.70 DEG	DA 4.02 KM	B LAT -0.48 DEG CD 20.9 KM
C LAT -0.75 DEG	TIILT DISTANCE 0.5	B LONG 36.22 DEG DA 5.3 KM
C LONG 35.41 DEG		C LAT -0.45 DEG TILT DISTANCE 3.8
D LAT 0.78 DEG		C LONG 36.05 DEG
D LONG 35.75 DEG		D LAT 0.23 DEG
		D LONG 36.20 DEG

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 5B.11 KM	TILT ANG 0.36 DEG	SUN AZIM 88.29 DEG	LATITUDE -0.13 DEG
YR.MD.DY	ALT RT -0.0129 KM/SEC	TILT AZIM 72.77 DEG	INCID ANG 65.21 DEG	LONGITUDE 36.21 DEG
HR.MI.SEC	LAT -0.13 DEG	SWING ANG 240.15 DEG	EMISS ANG 0.37 DEG	
	LAT 36.20 DEG	N.DEV. 347.38 DEG	PHASE ANG 65.57 DEG	
			ALPHA -0.36 DEG	

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 0.22 DEG	AB 20.9 KM	CORNER COORDINATE SIDE LENGTH
A LONG 36.23 DEG	BC 5.3 KM	A LAT 0.22 DEG AB 20.9 KM
B LAT -0.45 DEG	CD 20.9 KM	A LONG 36.23 DEG BC 5.3 KM
B LONG 36.08 DEG	DA 5.3 KM	B LAT -0.45 DEG CD 20.9 KM
C LAT -0.41 DEG	TILT DISTANCE 2.5	B LONG 36.22 DEG DA 5.3 KM
C LONG 35.91 DEG		C LAT -0.45 DEG TILT DISTANCE 3.8
D LAT 0.26 DEG		C LONG 36.05 DEG
D LONG 36.06 DEG		D LAT 0.23 DEG
		D LONG 36.20 DEG

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MISSION/
FRAME NO.

1061

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT RT -0.0117 KM/SEC
LAT -0.015 DEG
LONG 36.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.46 DEG	AB 47.5 KM
A LONG 37.19 DEG	BC 40.1 KM
B LAT -1.07 DEG	CD 47.3 KM
B LONG 36.85 DEG	DA 40.2 KM
C LAT -0.78 DEG	TILT DISTANCE
C LONG 35.56 DEG	0.7
D LAT 0.75 DEG	
D LONG 35.90 DEG	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 58.08 KM	SUN AZIM 88.27 DEG	LATITUDE -0.16 DEG
ALT RT -0.0117 KM/SEC	INCID ANG 65.07 DEG	LONGITUDE 36.36 DEG
LAT -0.015 DEG	SWING ANG 248.63 DEG	
LONG 36.35 DEG	N.DEV. 347.39 DEG	
	PHASE ANG 65.57 DEG	
	ALPHA -9.51 DEG	

HIGH RESOLUTION

CORNER COORDINATE	PHOTO ILLUMINATION	PRINCIPAL POINT
A LAT 0.16 DEG	SUN AZIM 88.26 DEG	LATITUDE -0.19 DEG
A LONG 36.52 DEG	INCID ANG 64.92 DEG	LONGITUDE 36.51 DEG
B LAT -0.52 DEG	EMIS ANG 0.65 DEG	
B LONG 36.37 DEG	PHASE ANG 65.57 DEG	
C LAT -0.48 DEG	ALPHA -0.65 DEG	
C LONG 36.20 DEG		
D LAT 0.20 DEG		
D LONG 36.35 DEG		

MISSION/
FRAME NO.

1062

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT RT -0.0104 KM/SEC
LAT -9.19 DEG
LONG 36.49 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.43 DEG	AB 47.6 KM
A LONG 37.34 DEG	BC 40.0 KM
B LAT -1.10 DEG	CD 47.2 KM
B LONG 37.00 DEG	DA 40.1 KM
C LAT -0.81 DEG	TILT DISTANCE
C LONG 35.71 DEG	0.9
D LAT 0.71 DEG	
D LONG 36.05 DEG	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 58.05 KM	SUN AZIM 88.26 DEG	LATITUDE -0.19 DEG
ALT RT -0.0104 KM/SEC	INCID ANG 64.92 DEG	LONGITUDE 36.51 DEG
LAT -9.19 DEG	SWING ANG 253.29 DEG	
LONG 36.49 DEG	N.DEV. 347.39 DEG	
	PHASE ANG 65.57 DEG	
	ALPHA -0.65 DEG	

HIGH RESOLUTION

CORNER COORDINATE	PHOTO ILLUMINATION	PRINCIPAL POINT
A LAT 0.13 DEG	SUN AZIM 88.26 DEG	LATITUDE -0.19 DEG
A LONG 36.67 DEG	INCID ANG 64.92 DEG	LONGITUDE 36.51 DEG
B LAT -0.55 DEG	EMIS ANG 0.65 DEG	
B LONG 36.52 DEG	PHASE ANG 65.57 DEG	
C LAT -0.51 DEG	ALPHA -0.65 DEG	
C LONG 36.35 DEG		
D LAT 0.16 DEG		
D LONG 36.50 DEG		

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MISSION/

FRAME NO.

1085
YR-MO-DY
HR-MI-SECTIME
660623
084621.22S/C POSITION
ALT 56.90 KM
ALT RT -0.0448 KM/SEC
LAT C.53 DEG
LONG 25.06 DEGS/C ORIENTATION
TILT ANG -3.41 DEG
TILT AZIM 11.18 DEG
SWING ANG 178.80 DEG
N.DEV. 347.61 DEGPHOTO ILLUMINATION
SUN AZIM 88.60 DEG
INCID ANG 69.26 DEG
EMISS ANG 0.43 DEG
PHASE ANG 69.36 DEG
ALPHA -3.09 DEGPRINCIPAL POINT
LATITUDE 1.54 DEG
LONGITUDE 25.06 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.15 DEG AB 45.4 KM
A LONG 25.87 DEG BC 39.2 KM
B LAT -0.35 DEG CD 46.4 KM
B LONG 2E.54 DEG DA 39.4 KM
C LAT -0.07 DEG TILT DISTANCE
C LONG 24.27 DEG 0.5
D LAT 1.43 DEG
D LONG 24.50 DEG

MISSION/

FRAME NO.

1086
YR-MO-DY
HR-MI-SECTIME
660623
084623.68S/C POSITION
ALT 56.79 KM
ALT RT -0.0435 KM/SEC
LAT 0.49 DEG
LONG 25.21 DEGS/C ORIENTATION
TILT ANG 0.44 DEG
TILT AZIM 31.25 DEG
SWING ANG 198.87 DEG
N.DEV. 347.61 DEGPHOTO ILLUMINATION
SUN AZIM 88.58 DEG
INCID ANG 69.11 DEG
EMISS ANG 0.45 DEG
PHASE ANG 69.36 DEG
ALPHA -0.24 DEGPRINCIPAL POINT
LATITUDE 0.51 DEG
LONGITUDE 25.21 DEGMEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.11 DEG AB 46.4 KM
A LONG 26.02 DEG BC 39.1 KM
B LAT -0.38 DEG CD 46.3 KM
B LONG 25.59 DEG DA 39.3 KM
C LAT -0.10 DEG TILT DISTANCE
C LONG 24.43 DEG 0.6
D LAT 1.39 DEG
D LONG 24.75 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.85 DEG AB 20.5 KM
A LONG 25.22 DEG BC 5.1 KM
B LAT 0.19 DEG CD 20.5 KM
B LONG 25.07 DEG DA 5.2 KM
C LAT 0.23 DEG TILT DISTANCE
C LONG 24.91 DEG 4.3
D LAT 0.89 DEG
D LONG 25.05 DEGPRINCIPAL POINT
LATITUDE 0.51 DEG
LONGITUDE 25.06 DEG

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MISSION/
FRAME NO.

1087
YR. MO. DY 660623
HR. HI. SEC 084626.14

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	56.69 KM	TIILT ANG 0.51 DEG	SUN AZIM 88.57 DEG	LATITUDE 0.47 DEG
ALT RT - 0.0423 KM/SEC		TIILT AZIM 47.52 DEG	INCID ANG 68.96 DEG	LONGITUDE 25.37 DEG
LAT	0.46 DEG	SWING ANG 215.13 DEG	EMISS ANG 0.52 DEG	
LONG	25.35 DEG	N.ADEV. 347.61 DEG	PHASE ANG 69.36 DEG	
			ALPHA -0.40 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1.08 DEG	AB 46.3 KM	CORNER COORDINATE SIDE LENGTH
A LONG 26.17 DEG	BC 39.0 KM	A LAT 0.78 DEG AB 20.4 KM
B LAT -0.41 DEG	CD 46.2 KM	A LONG 25.52 DEG BC 5.1 KM
B LONG 25.84 DEG	DA 39.3 KM	B LAT 0.13 DEG CD 20.4 KM
C LAT -0.13 DEG	TIILT DISTANCE 0.7	B LONG 25.38 DEG DA 5.1 KM
C LONG 24.58 DEG		C LAT 0.16 DEG TILT DISTANCE 5.3
D LAT 1.36 DEG		C LONG 25.21 DEG
D LONG 24.91 DEG		D LAT 0.82 DEG
		D LONG 25.35 DEG

MISSION/
FRAME NO.

1088
YR. MO. DY 660623
HR. HI. SEC 084628.59

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	56.58 KM	TIILT ANG 0.61 DEG	SUN AZIM 88.56 DEG	LATITUDE 0.44 DEG
ALT RT - 0.0410 KM/SEC		TIILT AZIM 59.15 DEG	INCID ANG 68.81 DEG	LONGITUDE 25.52 DEG
LAT	0.43 DEG	SWING ANG 226.76 DEG	EMISS ANG 0.63 DEG	
LONG	25.50 DEG	N.ADEV. 347.61 DEG	PHASE ANG 69.36 DEG	
			ALPHA -0.55 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1.05 DEG	AB 46.3 KM	CORNER COORDINATE SIDE LENGTH
A LONG 26.32 DEG	BC 38.9 KM	A LAT 0.75 DEG AB 20.4 KM
B LAT -0.44 DEG	CD 46.0 KM	A LONG 25.67 DEG BC 5.1 KM
B LONG 25.99 DEG	DA 39.2 KM	B LAT 0.09 DEG CD 20.4 KM
C LAT -0.16 DEG	TIILT DISTANCE 0.8	B LONG 25.53 DEG DA 5.1 KM
C LONG 24.74 DEG		C LAT 0.13 DEG TILT DISTANCE
D LAT 1.32 DEG		C LONG 25.36 DEG
D LONG 25.06 DEG		D LAT 0.79 DEG
		D LONG 25.51 DEG

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MISSION/
FRAME NO.

1089 TIME 660623
YR, MO, DY 084~~631~~04
HR, MI, SEC 004~~633~~.49

S/C POSITION ALT 56°49' KN
ALT RT -0.0398 KM/SEC
LAT 0°40' DEG
LONG 25.64 DEG

S/C ORIENTATION TILT ANG 0°72' DEG
TILT AZIM 67°29' DEG
SWING ANG 234°90' DEG
N.DEV. 347°61' DEG

PHOTO ILLUMINATION SUN AZIM 88°55' DEG
INCID ANG 68°66' DEG
EMISS ANG 0°75' DEG
PHASE ANG 69°36' DEG
ALPHA -0°70' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.01 DEG	AB 46.3 KM
A LONG 26.47 DEG	BC 38.9 KM
B LAT -0.48 DEG	CD 45.9 KM
B LONG 26.14 DEG	DA 39.1 KM
C LAT -0.20 DEG	TILT DISTANCE 1.0
C LONG 24.89 DEG	
D LAT 1.29 DEG	
D LONG 25.21 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.72 DEG	AB 20.4 KM
A LONG 25.82 DEG	BC 5.1 KM
B LAT 0.06 DEG	CD 20.3 KM
B LONG 25.68 DEG	DA 5.1 KM
C LAT 0.10 DEG	TILT DISTANCE
C LONG 25.51 DEG	
D LAT 0.75 DEG	
D LONG 25.66 DEG	

MISSION/
FRAME NO.

1090 TIME 660623
YR, MO, DY 084~~633~~04.9
HR, MI, SEC 004~~633~~.49

S/C POSITION ALT 56°39' KN
ALT RT -0.0385 KM/SEC
LAT 0°37' DEG
LONG 25.79 DEG

S/C ORIENTATION TILT ANG 0°85' DEG
TILT AZIM 73°08' DEG
SWING ANG 240°69' DEG
N.DEV. 347.61 DEG

PHOTO ILLUMINATION SUN AZIM 88°53' DEG
INCID ANG 68°51' DEG
EMISS ANG 0°88' DEG
PHASE ANG 69.36 DEG
ALPHA -0°85 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.98 DEG	AB 46.2 KM
A LONG 26.62 DEG	BC 38.8 KM
B LAT -0.51 DEG	CD 45.8 KM
B LONG 26.29 DEG	DA 39.1 KM
C LAT -0.23 DEG	TILT DISTANCE 1.2
C LONG 25.04 DEG	
D LAT 1.25 DEG	
D LONG 25.36 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT 0.68 DEG	AB 20.3 KM
A LONG 25.97 DEG	BC 5.1 KM
B LAT 0.03 DEG	CD 20.3 KM
B LONG 25.83 DEG	DA 5.1 KM
C LAT 0.07 DEG	TILT DISTANCE
C LONG 25.66 DEG	
D LAT 0.72 DEG	
D LONG 25.81 DEG	

PRINCIPAL POINT
LATITUDE 0°41 DEG
LONGITUDE 25.67 DEG

PRINCIPAL POINT
LATITUDE 0°37 DEG
LONGITUDE 25.62 DEG

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MISSION/

FRAME NO.

1091

TIME

660623

YR, MO, DY

064635.94

HR, MI, SEC

000.000

S/C POSITION

ALT

56.30

KM

TILT ANG

0.98

DEG

INCID ANG

77.33

DEG

EMISS ANG

1.01

DEG

PHASE ANG

69.36

DEG

ALPHA

-1.00

DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 46.2 KM

BC 38.8 KM

CD 45.7 KM

DA 39.0 KM

TILT DISTANCE

1.3

DEG

LAT

-0.26

DEG

LONG

25.19

DEG

LAT

1.22

DEG

LONG

25.51

DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 0.65 DEG

BC 5.1 KM

CD 20.3 KM

DA 5.1 KM

TILT DISTANCE

10.4

DEG

LAT

0.03

DEG

LONG

25.81

DEG

LAT

0.69

DEG

LONG

25.96

DEG

PHOTO ILLUMINATION

SUN AZIM

88.52 DEG

LATITUDE

0.34

DEG

LONGITUDE

25.97

DEG

PRINCIPAL POINT

INCID ANG

68.36 DEG

EMISS ANG

1.01

DEG

PHASE ANG

69.36

DEG

CORNER COORDINATE

A LAT

26.77 DEG

A LONG

-0.54 DEG

B LAT

26.44 DEG

B LONG

0.26 DEG

C LAT

25.19 DEG

C LONG

1.19 DEG

D LAT

25.51 DEG

D LONG

0.67 DEG

SIDES LENGTH

AB 20.3 KM

BC 5.1 KM

CD 20.3 KM

DA 5.1 KM

TILT DISTANCE

11.8

DEG

LAT

0.65 DEG

LONG

26.11 DEG

MISSION/

FRAME NO.

1092

TIME

660623

YR, MO, DY

084636.38

HR, MI, SEC

000.000

S/C POSITION

ALT

56.21

KM

TILT ANG

1.12

DEG

INCID ANG

80.55

DEG

SWING ANG

248.16

DEG

N.DEV.

347.61

DEG

ALPHA

-1.14

DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 46.2 KM

BC 38.8 KM

CD 45.7 KM

DA 39.0 KM

TILT DISTANCE

1.5

DEG

LAT

-0.29

DEG

LONG

25.35

DEG

LAT

1.18

DEG

LONG

25.67

DEG

TILT DISTANCE

1.5

DEG

LAT

0.62

DEG

LONG

26.27

DEG

LAT

-0.04

DEG

LONG

26.13

DEG

LAT

0.00

DEG

LONG

25.96

DEG

LAT

0.65

DEG

LONG

26.11

DEG

PHOTO ILLUMINATION

SUN AZIM

88.51 DEG

LATITUDE

0.31

DEG

LONGITUDE

25.12

DEG

EMISS ANG

1.16

DEG

PHASE ANG

69.36

DEG

ALPHA

-1.14

DEG

MEDIUM RESOLUTION

CORNER COORDINATE

A LAT

26.52 DEG

A LONG

-0.57 DEG

B LAT

26.59 DEG

B LONG

C LAT

C LONG

D LAT

D LONG

TILT DISTANCE

1.5

DEG

LAT

0.62

DEG

LONG

26.27

DEG

LAT

0.04

DEG

LONG

26.13

DEG

EMISS ANG

1.16

DEG

PHASE ANG

69.36

DEG

ALPHA

-1.14

DEG

HIGH RESOLUTION

CORNER COORDINATE

A LAT

26.52 DEG

A LONG

-0.04 DEG

B LAT

26.13 DEG

C LAT

0.00 DEG

D LAT

0.65 DEG

TILT DISTANCE

11.8

DEG

LAT

20.3

DEG

LONG

5.1

DEG

LAT

20.2

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MISSION/
FRAME NO.

1093 TIME 660823
YR, MO, DY 084643.83
HR, MI, SEC

S/C POSITION	ALT	KM	S/C ORIENTATION	TILT ANG	1.26 DEG	PHOTO ILLUMINATION	SUN AZIM	88.49 DEG	PRINCIPAL POINT
ALT RT	-0.0348	KM/SEC	TIILT AZIM	83.06 DEG	INCID ANG	68.06 DEG	LATITUDE	5.28 DEG	
LAT	0.27 DEG		SWING ANG	250.67 DEG	EMISS ANG	1.30 DEG	LONGITUDE	26.27 DEG	
LONG	26.23 DEG		NDEV.	347.61 DEG	PHASE ANG	65.36 DEG			
					ALPHA	-1.29 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 0.88 DEG	AB 46.1 KM	A LAT 0.58 DEG	AB 20.2 KM	
A LONG 27.07 DEG	BC 38.6 KM	A LONG 26.42 DEG	BC 5.1 KM	
B LAT -0.61 DEG	CD 45.5 KM	B LAT -0.07 DEG	CD 20.2 KM	
B. LONG 26.74 DEG	DA 38.9 KM	B LONG 26.28 DEG	DA 5.1 KM	
C LAT -0.32 DEG	TIILT DISTANCE 1.7	C LAT -0.03 DEG	TIILT DISTANCE 13.3	
C LONG 25.50 DEG		C LONG 26.12 DEG		
D LAT 1.15 DEG		D LAT 0.62 DEG		
D LONG 25.82 DEG		D LONG 26.26 DEG		

MISSION/
FRAME NO.

1094 TIME 660823
YR, MO, DY 084643.27
HR, MI, SEC

S/C POSITION	ALT	KM	S/C ORIENTATION	TILT ANG	1.40 DEG	PHOTO ILLUMINATION	SUN AZIM	88.48 DEG	PRINCIPAL POINT
ALT RT	-0.0335	KM/SEC	TIILT AZIM	85.06 DEG	INCID ANG	67.91 DEG	LATITUDE	0.24 DEG	
LAT	0.24 DEG		SWING ANG	252.67 DEG	EMISS ANG	1.45 DEG	LONGITUDE	26.42 DEG	
LONG	26.37 DEG		NDEV.	347.61 DEG	PHASE ANG	69.36 DEG			
					ALPHA	-1.44 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 0.85 DEG	AB 46.1 KM	A LAT 0.55 DEG	AB 20.2 KM	
A LONG 27.22 DEG	BC 38.6 KM	A LONG 26.57 DEG	BC 5.1 KM	
B LAT -0.64 DEG	CD 45.4 KM	B LAT -0.10 DEG	CD 20.2 KM	
B. LONG 26.89 DEG	DA 38.8 KM	B LONG 26.43 DEG	DA 5.1 KM	
C LAT -0.35 DEG	TIILT DISTANCE 1.9	C LAT -0.06 DEG	TIILT DISTANCE 14.8	
C LONG 25.65 DEG		C LONG 26.27 DEG		
D LAT 1.11 DEG		D LAT 0.59 DEG		
D LONG 25.57 DEG		D LONG 26.41 DEG		

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MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT RT -0.0323 KM/SEC LAT 3.21 DEG LONG 26.52 DEG	S/C ORIENTATION TILT ANG 1.54 DEG SWING ANG 254.31 DEG N.DEV. .347.61 DEG	PHOTO ILLUMINATION SUN AZIM 88.46 DEG INCID ANG 67.76 DEG EMIS ANG 1.59 DEG PHASE ANG 69.36 DEG ALPHA -1.59 DEG	PRINCIPAL POINT LATITUDE 0.21 DEG LONGITUDE 26.57 DEG
MEDIUM RESOLUTION					
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	CORNER COORDINATE A LAT 0.82 DEG A LONG 27.37 DEG B LAT -0.67 DEG B LONG 27.04 DEG C LAT -0.38 DEG C LONG 25.80 DEG D LAT 1.08 DEG D LONG 26.12 DEG	SIDE LENGTH AB 46.1 KM BC 38.5 KM CD 45.3 KM DA 38.8 KM TILT DISTANCE 2.1	CORNER COORDINATE A LAT 0.52 DEG A LONG 26.72 DEG B LAT -0.13 DEG B LONG 26.58 DEG C LAT -0.10 DEG C LONG 26.42 DEG D LAT 0.55 DEG D LONG 26.56 DEG	HIGH RESOLUTION SIDE LENGTH AB 20.2 KM BC 5.1 KM CD 20.1 KM DA 5.1 KM TILT DISTANCE 16.4
MISSION/ FRAME NO.					
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT RT -0.0310 KM/SEC LAT 0.18 DEG LONG 26.66 DEG	S/C ORIENTATION TILT ANG 1.69 DEG SWING ANG 255.66 DEG N.DEV. 347.61 DEG	PHOTO ILLUMINATION SUN AZIM 88.45 DEG INCID ANG 67.61 DEG EMIS ANG 1.74 DEG PHASE ANG 69.36 DEG ALPHA -1.74 DEG	PRINCIPAL POINT LATITUDE 0.18 DEG LONGITUDE 26.72 DEG
MEDIUM RESOLUTION					
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	CORNER COORDINATE A LAT 0.78 DEG A LONG 27.52 DEG B LAT -0.70 DEG B LONG 27.19 DEG C LAT -0.41 DEG C LONG 25.96 DEG D LAT 1.04 DEG D LONG 26.27 DEG	SIDE LENGTH AB 46.1 KM BC 38.5 KM CD 45.2 KM DA 38.7 KM TILT DISTANCE 2.3	CORNER COORDINATE A LAT 0.49 DEG A LONG 26.87 DEG B LAT -0.16 DEG B LONG 26.73 DEG C LAT -0.13 DEG C LONG 26.57 DEG D LAT 0.52 DEG D LONG 26.71 DEG	HIGH RESOLUTION SIDE LENGTH AB 20.2 KM BC 5.1 KM CD 20.1 KM DA 5.1 KM TILT DISTANCE 17.9

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MISSION /

FRAME NO.

TIME

S/C POSITION

1097	YR, MO, DY	660823	ALT	55.81 KM	TILT ANG	1.83 DEG	PHOTO ILLUMINATION	SUN AZIM	88.43 DEG	PRINCIPAL POINT	
	HR, MI, SEC	084650.58	ALT RT	-0.0298 KM/SEC	TILT AZIM	89.19 DEG		INCID ANG	67.46 DEG	LATITUDE	0.15 DEG
			LAT	0.14 DEG	SWING ANG	256.80 DEG		EMISS ANG	1.89 DEG	LONGITUDE	26.87 DEG
			LONG	26.81 DEG	N.DEV.	347.61 DEG		PHASE ANG	69.36 DEG		
								ALPHA	-1.89 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	C.75 DEG	AB	46.1 KM	TILT DISTANCE		HIGH RESOLUTION
A LONG	27.67 DEG	BC	38.5 KM	C LAT	0.45 DEG	CORNER COORDINATE
B LAT	-0.73 DEG	CD	45.1 KM	A LAT	0.45 DEG	SIDE LENGTH
B LONG	27.34 DEG	DA	38.7 KM	A LONG	27.02 DEG	AB 20.1 KM
C LAT	-0.45 DEG			B LAT	-0.20 DEG	BC 5.0 KM
C LONG	26.11 DEG			B LONG	26.88 DEG	CD 20.1 KM
D LAT	1.01 DEG			C LAT	-0.16 DEG	DA 5.1 KM
D LONG	26.42 DEG			C LONG	26.72 DEG	TILT DISTANCE

347.61 DEG

19.4

MISSION /

FRAME NO.

TIME

S/C POSITION

1098	YR, MO, DY	660823	ALT	55.73 KM	TILT ANG	1.98 DEG	PHOTO ILLUMINATION	SUN AZIM	88.42 DEG	PRINCIPAL POINT	
	HR, MI, SEC	084653.02	ALT RT	-0.0285 KM/SEC	TILT AZIM	90.16 DEG		INCID ANG	67.31 DEG	LATITUDE	0.11 DEG
			LA	0.11 DEG	SWING ANG	257.77 DEG		EMISS ANG	2.04 DEG	LONGITUDE	27.02 DEG
			LONG	26.95 DEG	N.DEV.	347.61 DEG		PHASE ANG	69.36 DEG		
								ALPHA	-2.04 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	C.72 DEG	AB	46.1 KM	TILT DISTANCE		HIGH RESOLUTION
A LONG	27.82 DEG	BC	38.4 KM	C LAT	0.42 DEG	CORNER COORDINATE
B LAT	-0.77 DEG	CD	45.0 KM	A LONG	27.17 DEG	SIDE LENGTH
B LONG	27.49 DEG	DA	38.7 KM	B LAT	-0.23 DEG	BC 5.0 KM
C LAT	-0.48 DEG			B LONG	27.03 DEG	CD 20.1 KM
C LONG	26.26 DEG			C LAT	-0.19 DEG	DA 5.1 KM
D LAT	0.57 DEG			C LONG	26.87 DEG	TILT DISTANCE
D LONG	26.57 DEG			D LAT	0.45 DEG	21.0

347.61 DEG

27.01 DEG

21.0

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MISSION /

MEDIUM RESOLUTION		SIDE LENGTH	LEN
CORNER	COORDINATE		
A	LAT	0.69 DEG	AB 4.61
A	LONG	0.77 DEG	BC 5.84
B	LAT	-0.80 DEG	CD 4.49
B	LONG	27.64 DEG	DA 38.5
C	LAT	-0.51 DEG	TILT DIS.
C	LONG	26.41 DEG.	2.5
D	LAT	0.54 DEG	
D	LONG	26.72 DEG	

HIGH RESOLUTION		SID
CORNER	COORDINATE	
A LAT	.0-.39	DEG
A LONG	27+.32	DEG
B LAT	-0-.26	CD
B LONG	27-.18	DEG
C LAT	-0-.22	DEG
C LONG	27-.02	DEG
D LAT	0-.42	DEG
D LONG	27.16	DEG

MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
11100	660623 YR, NO. DY HR, MIN SEC	ALT ~0.0261 LA.T. LONG	55.60 KM/SEC 0.05 DEG 27.24 DEG	SUN AZIM 91.73 DEG SWING ANG 347.61 N.DEV.	SUN DEG 67.02 DEG EMISS. ANG 359.34 DEG PHASE ANG 69.36 DEG ALPHA -2.34 DEG
			TILT ANG 2.27 DEG TILT AZIM 91.73 DEG INCID ANG 347.61 DEG		LATITUDE C. 25 DEG LONGITUDE 27.32 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	0°.65 DEG	AB 46.1 KM
A LONG	28°.12 DEG	BC 38.3 KM
B LAT	-0°.83 DEG	CD 44.8 KM
B LONG	27°.79 DEG	DA 38.6 KM
C LAT	-0°.54 DEG	TILT DISTANCE 3.1
C LONG	26°.56 DEG	
D LAT	0°.50 DEG	
D LONG	26°.88 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	0.35 DEG	AB
A LONG	27.47 DEG	BC
B LAT	-0.29 DEG	CD
B LONG	27.33 DEG	DA
C LAT	-0.26 DEG	TIL
C LONG	27.16 DEG	
D LAT	0.39 DEG	
D LONG	27.31 DEG	

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MISSION/
FRAME NO.

1102 TIME 660623
YR, MO, DY
HR, MT, SEC 163623.51

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 1198.22 KM	TILT ANG 35.75 DEG	SUN AZIM 318.30 DEG	LATITUDE -14.68 DEG
ALT RT 0.4002 KM/SEC	TILT AZIM 258.94 DEG	INCID ANG 21.30 DEG	LONGITUDE 194.34 DEG
LAT -9.76 DEG	SWING ANG 253.73 DEG	EMISS ANG 86.94 DEG	
LONG 150.37 DEG	N.DEV. 163.86 DEG	PHASE ANG 95.07 DEG	
		ALPHA -80.58 DEG	

MISSION/
FRAME NO.

1103 TIME 660623
YR, MO, DY
HR, MT, SEC 223626.71

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 66.77 KM	TILT ANG .12.52 DEG	SUN AZIM 88.87 DEG	LATITUDE 2.07 DEG
ALT RT -0.1224 KM/SEC	TILT AZIM 223.02 DEG	INCID ANG 79.09 DEG	LONGITUDE 8.13 DEG
LAT 2.43 DEG	SWING ANG 41.22 DEG	EMISS ANG 13.00 DEG	
LONG 8.47 DEG	N.DEV. 357.47 DEG	PHASE ANG 70.22 DEG	
		ALPHA 8.70 DEG	

MISSION/
FRAME NO.

1103 TIME 660623
YR, MO, DY
HR, MT, SEC 223626.71

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 56.2 KM	TILT ANG .12.52 DEG	SUN AZIM 88.87 DEG	LATITUDE 2.07 DEG
ALT RT -0.1224 KM/SEC	TILT AZIM 223.02 DEG	INCID ANG 79.09 DEG	LONGITUDE 8.13 DEG
LAT 2.43 DEG	SWING ANG 41.22 DEG	EMISS ANG 13.00 DEG	
LONG 8.47 DEG	N.DEV. 357.47 DEG	PHASE ANG 70.22 DEG	
		ALPHA 8.70 DEG	

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -46.57 DEG	AB 200.8 KM	CORNER COORDINATE SIDE LENGTH
A LONG 113.57 DEG	BC 0. KM	A LAT -16.04 DEG AB 82.6.5 KM
B LAT 0. DEG	CD 257.8 KM	A LONG 114.41 DEG BC 615.9 KM
B LONG 0. DEG	DA 876.2 KM	B LAT -0.76 DEG CD 692.4 KM
C LAT -6.07 DEG	TILT DISTANCE 57.6	B LONG 98.80 DEG DA 273.3 KM
C LONG 139.64 DEG		C LAT -5.12 DEG TILT DISTANCE
D LAT -41.08 DEG		C LONG 119.75 DEG 37.8
D LONG 127.43 DEG		D LAT -25.29 DEG
		D LONG 99.41 DEG

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 2.89 DEG	AB 56.2 KM	CORNER COORDINATE SIDE LENGTH
A LONG 8.88 DEG	BC 51.9 KM	A LAT 2.47 DEG AB 24.9 KM
B LAT 1.10 DEG	CD 60.5 KM	A LONG 5.25 DEG BC 6.5 KM
B LONG 8.90 DEG	DA 44.8 KM	B LAT 1.65 DEG CD 25.2 KM
C LAT 1.02 DEG	TILT DISTANCE 17.7	B LONG 8.22 DEG DA 5.1 KM
C LONG 7.19 DEG		C LAT 1.65 DEG TILT DISTANCE
D LAT 3.00 DEG		C LONG 8.01 DEG 35.0
D LONG 7.40 DEG		D LAT 2.48 DEG
		D LONG 8.05 DEG

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MISSION/

FRAME NO.

TIME

YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 54.52 KM	TILT ANG 1.87 DEG	SUN AZIM 88.59 DEG	LATITUDE 2.53 DEG
ALT RT -0.0482 KM/SEC	TILT AZIM 284.06 DEG	INCID ANG 70.37 DEG	LONGITUDE 11.55 DEG
LAT 0.51 DEG	SWING ANG 91.65 DEG	EMIS ANG 1.93 DEG	
LONG 11.61 DEG	N.DEV.	PHASE ANG 68.51 DEG	
		ALPHA 1.86 DEG	

MISSION/

FRAME NO.

TIME

YR, MO, DY
HR, MI, SEC

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1.10 DEG	AB 44.9 KM		A LAT 0.83 DEG	AB 19.6 KM	
A LONG 12.32 DEG	BC 37.7 KM		A LONG 11.73 DEG	BC 4.9 KM	
B LAT -0.31 DEG	CD 45.0 KM		B LAT 0.20 DEG	CD 19.7 KM	
B LONG 12.00 DEG	DA 37.7 KM	TILT DISTANCE	B LONG 11.56 DEG	DA 4.9 KM	TILT DISTANCE
C LAT -0.06 DEG			C LAT 0.23 DEG		
C LONG 10.79 DEG			C LONG 11.40 DEG		
D LAT 1.39 DEG			D LAT 0.86 DEG		
D LONG 11.11 DEG			D LONG 11.54 DEG		

MISSION/

FRAME NO.

TIME

YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 54.09 KM	TILT ANG 1.31 DEG	SUN AZIM 88.54 DEG	LATITUDE 0.41 DEG
ALT RT -0.0445 KM/SEC	TILT AZIM 284.90 DEG	INCID ANG 69.80 DEG	LONGITUDE 12.12 DEG
LAT 0.40 DEG	SWING ANG 92.49 DEG	EMIS ANG 1.35 DEG	
LONG 12.16 DEG	N.DEV.	PHASE ANG 68.51 DEG	
		ALPHA 1.29 DEG	

MISSION/

FRAME NO.

TIME

YR, MO, DY
HR, MI, SEC

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 0.58 DEG	AB 43.8 KM		A LAT 0.70 DEG	AB 19.5 KM	
A LONG 12.68 DEG	BC 37.3 KM		A LONG 12.27 DEG	BC 4.9 KM	
B LAT -0.43 DEG	CD 44.5 KM		B LAT 0.08 DEG	CD 19.5 KM	
B LONG 12.57 DEG	DA 37.4 KM	TILT DISTANCE	B LONG 12.13 DEG	DA 4.9 KM	TILT DISTANCE
C LAT -0.18 DEG			C LAT 0.11 DEG		
C LONG 11.37 DEG			C LONG 11.97 DEG		
D LAT 1.26 DEG			D LAT 0.74 DEG		
D LONG 11.68 DEG			D LONG 12.11 DEG		

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MISSION/
FRAME NO.1107
YR. NO. DY
HR. MI. SECTIME
660524
090549.96S/C POSITION
ALT 53°71'. KM
ALT RT -0.0398 KM/SEC
LAT 0.28 DEG
LONG 12.71 DEG
N.DEV.
S/C ORIENTATION
TILT ANG 0.75 DEG
TILT AZIM 287.00 DEG
SWING ANG 94.59 DEG
N.DEV.
PHASE ANG 68.51 DEG
ALPHA 0.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.86 DEG AB 43.6 KM
A LONG 13.45 DEG BC 37.1 KM
B LAT -0.55 DEG CD 44.0 KM
B LONG 13.14 DEG DA 37.1 KM
C LAT -0.29 DEG TILT DISTANCE 1.0
C LONG 11.54 DEG
D LAT 1.12 DEG
D LONG 12.25 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.58 DEG AB 19.3 KM
A LONG 12.83 DEG BC 4.9 KM
B LAT -0.04 DEG CD 19.4 KM
B LONG 12.70 DEG DA 4.9 KM
C LAT -0.01 DEG TILT DISTANCE 7.9
C LONG 12.54 DEG
D LAT 0.61 DEG
D LONG 12.68 DEGMISSION/
FRAME NO.1108
YR. NO. DY
HR. MI. SECTIME
660524
090555.10S/C POSITION
ALT 53.36 KM
ALT RT -0.0351 KM/SEC
LAT 0.16 DEG
LONG 13.26 DEG
N.DEV.
S/C ORIENTATION
TILT ANG 0.19 DEG
TILT AZIM 301.12 DEG
SWING ANG 108.70 DEG
N.DEV.
PHASE ANG 68.59 DEG
ALPHA 0.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.73 DEG AB 43.5 KM
A LONG 14.01 DEG BC 36.8 KM
B LAT -0.67 DEG CD 43.6 KM
B LONG 13.70 DEG DA 36.8 KM
C LAT -0.41 DEG TILT DISTANCE 0.2
C LONG 12.51 DEG
D LAT 1.90 DEG
D LONG 12.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.46 DEG AB 19.2 KM
A LONG 13.40 DEG BC 4.8 KM
B LAT -0.16 DEG CD 19.2 KM
B LONG 13.26 DEG DA 4.8 KM
C LAT -0.13 DEG TILT DISTANCE 2.0
C LONG 13.10 DEG
D LAT 0.49 DEG
D LONG 13.24 DEGPHOTO ILLUMINATION
SUN AZIM 88.49 DEG
INCID ANG 68.68 DEG
EMIS ANG 0.20 DEG
PHASE ANG 68.51 DEG
ALPHAPRINCIPAL POINT
LATITUDE 0.28 DEG
LONGITUDE 12.69 DEGPHOTO ILLUMINATION
SUN AZIM 88.44 DEG
INCID ANG 68.68 DEG
EMIS ANG 0.20 DEG
PHASE ANG 68.51 DEG
ALPHAPRINCIPAL POINT
LATITUDE 0.16 DEG
LONGITUDE 13.25 DEG

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MISSION/

FRAME NO.

1109	TIME 660 ^E 24	S/C POSITION ALT 53°07' KM	S/C ORIENTATION TILT ANG 0°38' DEG	PHOTO ILLUMINATION SUN AZIM 88°39' DEG	PRINCIPAL POINT LATITUDE 0°34' DEG
YR, MO, DY HR, MI, SEC	0910 C 8.20	ALT RT -0.0304 KM/SEC	TILT AZIM 92.45' DEG	INCID ANG 68°12' DEG	LONGITUDE 13.81' DEG
		LAT 0.04' DEG	SWING ANG 260°04' DEG	EMISS ANG 0°39' DEG	
		LONG 13.80' DEG	N.DEV. 347°59' DEG	PHASE ANG 68°51' DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0°61' DEG	AB 43°4' KM
A LONG 14°57' DEG	BC 36°6' KM
B LAT -0°79' DEG	CD 43°2' KM
B LONG 14°26' DEG	DA 36°6' KM
C LAT -0°52' DEG	TILT DISTANCE 0°5'
C LONG 13°08' DEG	
D LAT 0°87' DEG	
D LONG 13°39' DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0°33' DEG	AB 19.1' KM
A LONG 13°95' DEG	BC 4.8' KM
B LAT -0°28' DEG	CD 19.1' KM
B LONG 13°82' DEG	DA 4.8' KM
C LAT -0°25' DEG	TILT DISTANCE 4.0'
C LONG 13°66' DEG	
D LAT 0°37' DEG	
D LONG 13°80' DEG	

MISSION/

FRAME NO.

1110	TIME 660 ^E 24	S/C POSITION ALT 52°81' KM	S/C ORIENTATION TILT ANG 0°93' DEG	PHOTO ILLUMINATION SUN AZIM 88°34' DEG	PRINCIPAL POINT LATITUDE -0°28' DEG
YR, MO, DY HR, MI, SEC	091017.26	ALT RT -0.0258 KM/SEC	TILT AZIM 98°21' DEG	INCID ANG 67°56' DEG	LONGITUDE 14.37' DEG
		LAT -0°07' DEG	SWING ANG 265.79' DEG	EMISS ANG 0°96' DEG	
		LONG 14°34' DEG	N.DEV. 347°59' DEG	PHASE ANG 68°51' DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.49' DEG	AB 43.3' KM
A LONG 15°13' DEG	BC 36.4' KM
B LAT -0.91' DEG	CD 42.8' KM
B LONG 14°82' DEG	DA 36.5' KM
C LAT -0.64' DEG	TILT DISTANCE 1.3'
C LONG 13°65' DEG	
D LAT 0.74' DEG	
D LONG 13°55' DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0°21' DEG	AB 19.0' KM
A LONG 14°51' DEG	BC 4.8' KM
B LAT -0°40' DEG	CD 19.0' KM
B LONG 14°38' DEG	DA 4.8' KM
C LAT -0°37' DEG	TILT DISTANCE 9.8'
C LONG 14°22' DEG	
D LAT 0°25' DEG	
D LONG 14°36' DEG	

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MISSION/
FRAME NO.

1111 YR, MO, DY

660524 HR, MI, SEC

091026.27 ALT RT -.0.0212 KM/SEC

LAT -.0.19 DEG

LONG .14.88 DEG

S/C POSITION

ALT .52.43 KM

TILT ANG 1.48 DEG

TILT AZIM 99.66 DEG

SWING ANG 257.25 DEG

N.DEV. 347.59 DEG

PHASE ANG 68.51 DEG

ALPHA -.1.50 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT C.37 DEG AB 43.3 KM

A LONG 15.68 DEG BC 36.3 KM

B LAT -.1.03 DEG CD 42.5 KM

B LONG 15.37 DEG DA 36.4 KM

C LAT -.0.76 DEG TILT DISTANCE 2.0

C LONG 14.21 DEG

D LAT C.61 DEG

D LONG 14.51 DEG

S/C ORIENTATION

TILT ANG 2.03 DEG

TILT AZIM 100.38 DEG

SWING ANG 267.97 DEG

N.DEV. 347.50 DEG

PHOTO ILLUMINATION

SUN AZIM 88.28 DEG

INCID ANG 67.01 DEG

EMISS ANG 1.53 DEG

PHASE ANG 68.51 DEG

ALPHA -.1.50 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.09 DEG AB 19.0 KM

A LONG 15.07 DEG BC 4.8 KM

B LAT -.0.52 DEG CD 18.9 KM

B LONG 14.93 DEG DA 4.8 KM

C LAT -.0.49 DEG TILT DISTANCE

C LONG 14.78 DEG 15.7

D LAT 0.12 DEG

D LONG 14.91 DEG

PRINCIPAL POINT

LATITUDE -.0.20 DEG

LONGITUDE 14.92 DEG

MISSION/
FRAME NO.

1112 YR, MO, DY

660524 HR, MI, SEC

091025.28 ALT RT -.0.0165 KM/SEC

LAT -.0.31 DEG

LONG 15.41 DEG

S/C POSITION

ALT .52.43 KM

TILT ANG 2.03 DEG

TILT AZIM 100.38 DEG

SWING ANG 267.97 DEG

N.DEV. 347.50 DEG

PHOTO ILLUMINATION

SUN AZIM 88.22 DEG

INCID ANG 66.46 DEG

EMISS ANG 2.09 DEG

PHASE ANG 68.51 DEG

ALPHA -.2.05 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.03 DEG AB 18.9 KM

A LONG 15.62 DEG BC 4.7 KM

B LAT -.0.64 DEG CD 18.9 KM

B LONG 15.48 DEG DA 4.8 KM

C LAT -.0.60 DEG TILT DISTANCE

C LONG 15.33 DEG 21.5

D LAT 0.00 DEG

D LONG 15.46 DEG

PRINCIPAL POINT

LATITUDE -.0.22 DEG

LONGITUDE 15.47 DEG

TILT DISTANCE

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MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1113	660E24	ALT 74.69 KM ALT RT -0.1553 KM/SEC	TILT ANG 14.86 DEG TILT AZIM 239.26 DEG	SUN AZIM 88.80 DEG INCID ANG 83.64 DEG	LATITUDE 2.85 DEG LONGITUDE -5.29 DEG
	1604 3.01	LAT 3.19 DEG LONG -4.73 DEG	SWING ANG 58.31 DEG N.DEV. 358.15 DEG	EMISS ANG 15.52 DEG PHASE ANG 70.24 DEG	
				ALPHA 13.33 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.77 DEG	AB 59.3 KM
A LONG -4.46 DEG	BC 59.6 KM
B LAT 1.82 DEG	CD 70.3 KM
B LONG -4.43 DEG	DA 52.3 KM
C LAT 1.62 DEG	TILT DISTANCE 21.2
C LONG -6.39 DEG	
D LAT 3.52 DEG	
D LONG -6.18 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.30 DEG	AB 27.9 KM
A LONG -5.16 DEG	BC 7.4 KM
B LAT 2.38 DEG	CD 28.5 KM
B LONG -5.19 DEG	DA 7.0 KM
C LAT 2.37 DEG	TILT DISTANCE 61.4
C LONG -5.43 DEG	
D LAT 3.31 DEG	
D LONG -5.39 DEG	

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1114	660E24	ALT 73.66 KM ALT RT -0.1521 KM/SEC	TILT ANG 14.57 DEG TILT AZIM 238.24 DEG	SUN AZIM 88.81 DEG INCID ANG 83.22 DEG	LATITUDE 2.77 DEG LONGITUDE -4.87 DEG
	1604 9.71	LAT 3.10 DEG LONG -4.34 DEG	SWING ANG 57.23 DEG N.DEV. 358.11 DEG	EMISS ANG 15.20 DEG PHASE ANG 70.24 DEG	
				ALPHA 12.91 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.68 DEG	AB 58.5 KM
A LONG -4.66 DEG	BC 58.5 KM
B LAT 1.75 DEG	CD 69.0 KM
B LONG -4.03 DEG	DA 51.3 KM
C LAT 1.56 DEG	TILT DISTANCE 20.7
C LONG -5.95 DEG	
D LAT 3.83 DEG	
D LONG -5.75 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.21 DEG	AB 27.5 KM
A LONG -4.75 DEG	BC 7.3 KM
B LAT 2.31 DEG	CD 28.1 KM
B LONG -4.77 DEG	DA 6.9 KM
C LAT 2.30 DEG	TILT DISTANCE 58.0
C LONG -5.01 DEG	
D LAT 3.22 DEG	
D LONG -4.98 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SEC
000540.81

S/C POSITION
ALT 1456.20 KM
ALT RT 0.3189 KM/SEC
LAT -7.54 DEG
LONG 148.62 DEG

S/C ORIENTATION
TILT ANG 9.29 DEG
TILT AZIM 36.85 DEG
SWING ANG 30.74 DEG
N.DEV. 172.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -18.40 DEG	AB 575.3 KM
A LONG 134.30 DEG	BC 346.7 KM
B LAT 35.49 DEG	CD 393.4 KM
B LONG 131.32 DEG	DA 079.8 KM
C LAT 25.36 DEG	DB 116.4 KM
C LONG -166.40 DEG	DC 13.0 KM
D LAT -23.51 DEG	DA 99.4 KM
D LONG 172.82 DEG	DB 154.66 KM

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -10.79 DEG	AB 524.7 KM
A LONG 142.20 DEG	BC 133.9 KM
B LAT 6.48 DEG	CD 525.5 KM
B LONG 123.4 KM	DA 123.4 KM
C LAT 5.97 DEG	TILT DISTANCE 72.2
C LONG 148.59 DEG	DB 11.29 DEG
D LAT -11.29 DEG	DC 146.32 DEG

MISSION/
FRAME NO.TIME
660E25
000540.81

S/C POSITION
ALT 1456.20 KM
ALT RT 0.3189 KM/SEC
LAT -7.54 DEG
LONG 148.62 DEG

S/C ORIENTATION
TILT ANG 9.29 DEG
TILT AZIM 36.85 DEG
SWING ANG 30.74 DEG
N.DEV. 172.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -18.40 DEG	AB 575.3 KM
A LONG 134.30 DEG	BC 346.7 KM
B LAT 35.49 DEG	CD 393.4 KM
B LONG 131.32 DEG	DA 079.8 KM
C LAT 25.36 DEG	DB 116.4 KM
C LONG -166.40 DEG	DC 13.0 KM
D LAT -23.51 DEG	DA 99.4 KM
D LONG 172.82 DEG	DB 154.66 KM

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -9.58 DEG	AB 524.4 KM
A LONG 150.26 DEG	BC 147.2 KM
B LAT 9.02 DEG	CD 574.4 KM
B LONG 152.33 DEG	DA 132.3 KM
C LAT 8.81 DEG	TILT DISTANCE 99.4
C LONG 157.25 DEG	DB 11.29 DEG
D LAT -15.04 DEG	DC 146.32 DEG
D LONG 154.66 DEG	DA 99.4 KM

PHOTO ILLUMINATION
SUN AZIM 272.60 DEG
INCID ANG 71.04 DEG
EMISS ANG 12.23 DEG
PHASE ANG 69.75 DEG
ALPHA - 0.83 DEG

PHOTO ILLUMINATION
SUN AZIM 271.76 DEG
INCID ANG 79.13 DEG
EMISS ANG 17.26 DEG
PHASE ANG 69.75 DEG
ALPHA - 9.00 DEG

PHOTO ILLUMINATION
SUN AZIM 271.76 DEG
INCID ANG 79.13 DEG
EMISS ANG 17.26 DEG
PHASE ANG 69.75 DEG
ALPHA - 9.00 DEG

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MISSION/

FRAME NO.

1117

YR-MO-DY

660825

HR-MI-SEC

3715.081

TIME

1302 4.86

S/C POSITION

ALT 1581.24 KM

TILT ANG 32.77 DEG

TILT AZIM 287.59 DEG

INCID ANG 25.49 DEG

EMISS ANG 90.00 DEG

PHASE ANG 115.01 DEG

N.DEV.

152.84 DEG

ALPHA -90.30 DEG

MISSION/

FRAME NO.

1117

YR-MO-DY

660825

HR-MI-SEC

3715.081

TIME

1302 4.86

S/C POSITION

ALT 0.2655 KM/SEC

TILT ANG 264.84 DEG

SWING ANG 264.84 DEG

N.DEV.

174.84 DEG

ALPHA -90.30 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.0437 KM/SEC

TILT ANG 2.54 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

YR-MO-DY

660825

HR-MI-SEC

1302 4.86

TIME

1302 4.86

S/C POSITION

ALT 0.27 DEG

TILT ANG 0.27 DEG

TILT AZIM 284.98 DEG

SWING ANG 93.06 DEG

N.DEV.

348.10 DEG

ALPHA 2.50 DEG

MISSION/

FRAME NO.

1118

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

1119 TIME: 660625 S/C POSITION ALT 51° 70' KM TILT ANG 2.40 DEG
 YR.MD.DY HR.MI.SEC 1302 7.15 ALT RT -0.6425 KM/SEC TILT AZIM 285.15 DEG
 LAT 0.24 DEG SWING ANG 93.23 DEG
 LONG -2.34 DEG N.DEV. 348.09 DEG PHASE ANG 67.80 DEG
 ALPHA 2.36 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.80 DEG AB 41.6 KM
 A LONG -1.70 DEG BC 35.7 KM
 B LAT -0.54 DEG CD 42.3 KM
 B LONG -1.98 DEG DA 35.8 KM
 C LAT -0.31 DEG TILT DISTANCE 3.3
 C LONG -3.14 DEG
 C LAT 1.37 DEG
 D LONG -2.85 DEG

MISSION/
FRAME NO.
 1120 YR.MD.DY 660825 S/C POSITION ALT 51° 61' KM TILT ANG 2.26 DEG
 HR.MI.SEC 1302 9.43 ALT RT -3.0414 KM/SEC TILT AZIM 285.33 DEG
 LAT 0.21 DEG SWING ANG 93.41 DEG
 LONG -2.21 DEG N.DEV. 348.09 DEG PHASE ANG 67.80 DEG
 ALPHA 2.22 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.77 DEG AB 41.5 KM
 A LONG -1.56 DEG BC 35.5 KM
 B LAT -0.57 DEG CD 42.7 KM
 B LONG -1.84 DEG DA 35.7 KM
 C LAT -0.34 DEG TILT DISTANCE 3.1
 C LONG -2.59 DEG
 D LAT 1.04 DEG
 D LONG -2.70 DEG

S/C ORIENTATION
 ALT 51° 70' KM TILT ANG 2.40 DEG
 ALT RT -0.6425 KM/SEC TILT AZIM 285.15 DEG
 LAT 0.24 DEG SWING ANG 93.23 DEG
 LONG -2.34 DEG N.DEV. 348.09 DEG PHASE ANG 67.80 DEG
 ALPHA 2.36 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.54 DEG AB 18.6 KM
 A LONG -2.27 DEG BC 4.7 KM
 B LAT -0.06 DEG CD 18.7 KM
 B LONG -2.40 DEG DA 4.7 KM
 C LAT -0.03 DEG TILT DISTANCE
 C LONG -2.55 DEG 25.4
 D LAT 0.57 DEG
 D LONG -2.43 DEG

S/C ORIENTATION
 ALT 51° 61' KM TILT ANG 2.26 DEG
 ALT RT -3.0414 KM/SEC TILT AZIM 285.33 DEG
 LAT 0.21 DEG SWING ANG 93.41 DEG
 LONG -2.21 DEG N.DEV. 348.09 DEG PHASE ANG 67.80 DEG
 ALPHA 2.22 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.51 DEG AB 18.6 KM
 A LONG -2.13 DEG BC 4.7 KM
 B LAT -0.09 DEG CD 18.6 KM
 B LONG -2.26 DEG DA 4.7 KM
 C LAT -0.06 DEG TILT DISTANCE
 C LONG -2.41 DEG 23.9
 D LAT 0.54 DEG
 D LONG -2.28 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION /

FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
11121	YR. MO. DY HR. MI. SEC	660625 130211.70	ALT ALT RT LAT LONG	SUN AZIM TILT AZIM SWING ANG N.DEV.	LATITUDE INCID ANG EMISS. ANG PHASE ANG
			51.52 -0.0402 0.18 -2.07	2.12 DEG 285.54 DEG 93.62 DEG 348.09 DEG	0.19 DEG 69.89 DEG 2.18 DEG 67.80 DEG
			KW KW/SEC DEG DEG	88.46 DEG 218.00 DEG	-2.13 DEG

MEDIUM RESOLUTION		SIDE LENGTH	KM
CORNER	COORDINATE	AB	41.5
A LAT	0.74 DEG	BC	35.6 KM
A LONG	-1.42 DEG	CD	42.6 KM
B LAT	-0.50 DEG	DA	35.6 KM
B LONG	-1.70 DEG	TILT DISTANCE	
C LAT	-0.37 DEG	2.9	
C LONG	-2.85 DEG		
D LAT	1.00 DEG		
D LONG	-2.56 DEG		

HIGH RESOLUTION		SIDE 1
CORNER	COORDINATE	
A LAT	7.48 DEG	AB
A LONG	-1.99 DEG	BC
B LAT	-0.12 DEG	CD
B LONG	-2.12 DEG	DA
C LAT	-0.09 DEG	TILT
C LONG	-2.27 DEG	DE
D LAT	0.51 DEG	
D LONG	-2.15 DEG	

MISSIONS-FRAMEWORK

PHOTO ILLUMINATION	SUN AZIM	INCID ANG	EMISS ANG	PHASE ANG	ALPHA	PRINCIPAL POINT
	88.45 DEG	69.75 DEG	2.04 DEG	67.80 DEG	1.94 DEG	LATITUDE
						0.16 DEG
						LONGITUDE
						-71.99 DEG

MEDIUM RESOLUTION		SIDE LENGTH	TILT DISTANCE
CORNER	COORDINATE		
A LAT	0.71 DEG	AB 41.5 KM	
A LONG	-1.28 DEG	BC 35.5 KM	
B LAT	-0.63 DEG	CD 42.5 KM	
B LONG	-1.56 DEG	DA 35.6 KM	
C LAT	-0.54 DEG		2.7
C LONG	-2.71 DEG		
D LAT	0.97 DEG		
D LONG	-2.42 DEG		

HIGH RESOLUTION		SIDE	LENGTH
CORNER	COORDINATE		
A LAT	0.45 DEG	AB	18.5 KM
A LONG	-1.85 DEG	BC	4.7 KM
B LAT	-0.15 DEG	CD	18.6 KM
B LONG	-1.98 DEG	DA	4.7 KM
C LAT	-0.12 DEG	TILT DISTANCE	
C LONG	-2.13 DEG	21.0	
D LAT	0.48 DEG		
D LONG	-2.00 DEG		

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MISSION/
FRAME NO.

1123

YR, MO, DY
HR, MI, SECTIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
660825 ALT 51°34' KM TILT ANG 1.84° SUN AZIM 88°43' DEG LATITUDE 0.13 DEG
130216.25 ALT RT -0.0379 KM/SEC TILT AZIM 286.05° INCID ANG 69°61' DEG LONGITUDE -1.85 DEG
LAT 0.12 DEG SWING ANG 94°13' EMISS ANG 1.90 DEG
LONG -1.80 DEG N.DEV. 348.09° PHASE ANG 67°80' DEG
ALPHA 1.81 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION
A LAT 0.68° DEG	AB 41.4 KM	CORNER COORDINATE	CORNER COORDINATE
A LONG -1.14° DEG	BC 35.4 KM	A LAT 0.42° DEG	A LAT 0.42° DEG
B LAT -0.65° DEG	CD 42.4 KM	A LONG -1.72° DEG	BC 4.6 KM
B LONG -1.42° DEG	DA 35.5 KM	B LAT -0.18° DEG	CD 18.5 KM
C LAT -0.43° DEG	TILT DISTANCE 2.5	B LONG -1.84° DEG	DA 4.7 KM
C LONG -2.57° DEG	D LAT 0.45° DEG	C LAT -0.15° DEG	TILT DISTANCE 19.5
D LAT 0.94° DEG	D LONG -2.28° DEG	C LONG -1.99° DEG	
D LONG -2.14° DEG		D LAT 0.45° DEG	

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
660825 ALT 51°25' KM TILT ANG 1.70° SUN AZIM 88°42' DEG LATITUDE 0.10 DEG 130216.51 ALT RT -0.0367 KM/SEC TILT AZIM 286.37° INCID ANG 69°47' DEG LONGITUDE -1.71 DEG LAT 0.09° DEG SWING ANG 94°45' EMISS ANG 1.75 DEG LONG -1.67° DEG N.DEV. 348.09° PHASE ANG 67°80' DEG ALPHA 1.67 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT 0.65° DEG	AB 41.4 KM	CORNER COORDINATE	CORNER COORDINATE
A LONG -1.00° DEG	BC 35.4 KM	A LAT 0.39° DEG	A LAT 0.39° DEG
B LAT -0.68° DEG	CD 42.3 KM	A LONG -1.58° DEG	BC 4.6 KM
B LONG -1.28° DEG	DA 35.4 KM	B LAT -0.41° DEG	CD 18.5 KM
C LAT -0.46° DEG	TILT DISTANCE 2.3	B LONG -1.70° DEG	DA 4.6 KM
C LONG -2.43° DEG	D LAT 0.42° DEG	C LAT -0.18° DEG	TILT DISTANCE 18.1
D LAT -2.14° DEG	D LONG -1.73° DEG	C LONG -1.85° DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

YR-MO-DY

HR-MI-SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 51°17' KM	TILT ANG 1°57' DEG	SUN AZIM 88°41' DEG	LATITUDE 0°07' DFG
1125	ALT RT -0.0356 KM/SEC	TILT AZIM 286°75' DEG	INCID ANG 69°23' DEG	LONGITUDE -1°57' DEG
66C625	LAT 0°06' DEG	SWING ANG 94°82' DEG	EMISS ANG 1°61' DEG.	
130220.77	LONG -1°53' DEG	N.DEV. 348.09 DEG	PHASE ANG 67°80' DEG	
			ALPHA 1°53' DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 0°62' DEG	AB 41°4' KM	A LAT 0°35' DEG	AB 18°4' KM	
A LONG -0°25' DEG	BC 35°3' KM	A LONG -1°44' DEG	BC 4°6' KM	
B LAT -0°71' DEG	CD 42°2' KM	B LAT -0°24' DEG	CD 19°5' KM	
B LONG -1°14' DEG	DA 35°4' KM	B LONG -1°56' DEG	DA 4°6' KM	
C LAT -0°49' DEG	TILT DISTANCE 2.1	C LAT -0°21' DEG	TILT DISTANCE 16.6	
C LONG -2°28' DEG		C LONG -1°71' DEG		
D LAT 0°87' DEG		D LAT 0°39' DEG		
D LONG -2°00' DEG		D LONG -1°59' DEG		

MISSION/

FRAME NO.

YR-MO-DY

HR-MI-SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 51°09' KM	TILT ANG 1°43' DEG	SUN AZIM 88°40' DEG	LATITUDE 0°04' DFG
1126	ALT RT -0.0344 KM/SEC	TILT AZIM 287°19' DEG	INCID ANG 69°19' DEG	LONGITUDE -1°44' DEG
66C625	LAT 0°03' DEG	SWING ANG 95°27' DEG	EMISS ANG 1°47' DEG	
130223.02	LONG -1°40' DEG	N.DEV. 348.08 DEG	PHASE ANG 67°80' DEG	
			ALPHA 1°39' DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 0°59' DEG	AB 41°3' KM	A LAT 0°32' DEG	AB 18°4' KM	
A LONG -0°72' DEG	BC 35°2' KM	A LONG -1°30' DEG	BC 4°6' KM	
B LAT -0°74' DEG	CD 42°1' KM	B LAT -0°27' DEG	CD 18°4' KM	
B LONG -1°00' DEG	DA 35°3' KM	B LONG -1°42' DEG	DA 4°6' KM	
C LAT -0°51' DEG	TILT DISTANCE 1.9	C LAT -0°24' DEG	TILT DISTANCE 15.1	
C LONG -2°14' DEG		C LONG -1°57' DEG		
D LAT 0°84' DEG		D LAT 0°36' DEG		
D LONG -1°86' DEG		D LONG -1°45' DEG		

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 0°35' DEG	AB 18°4' KM	A LAT 0°35' DEG	AB 18°4' KM	
A LONG -1°44' DEG	BC 4°6' KM	A LONG -1°44' DEG	BC 4°6' KM	
B LAT -0°24' DEG	CD 18°4' KM	B LAT -0°24' DEG	CD 18°4' KM	
B LONG -1°56' DEG	DA 4°6' KM	B LONG -1°56' DEG	DA 4°6' KM	
C LAT -0°21' DEG	TILT DISTANCE 16.6	C LAT -0°21' DEG	TILT DISTANCE 16.6	
C LONG -1°71' DEG		C LONG -1°71' DEG		
D LAT 0°39' DEG		D LAT 0°39' DEG		
D LONG -1°59' DEG		D LONG -1°59' DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION /

FRAME NO.

TIME

S/C POSITION

ALT

51.02 KM

TILT ANG

1.29 DEG

INCID ANG

88.36 DEG

PHASE ANG

1.33 DEG

EMISI ANG

69.36 DEG

LAT

0.03 SEC

TILT AZIM

287.73 DEG

SWING ANG

95.91 DEG

N.DEV.

348.08 DEG

PHASE ANG

57.80 DEG

ALPHA

1.25 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT C.56 DEG

AB 41.3 KM

A LONG -C.58 DEG

BC 35.2 KM

B LAT -0.77 DEG

CD 42.0 KM

B LONG -0.67 DEG

DA 35.3 KM

C LAT -0.54 DEG

TILT DISTANCE

C LONG -2.00 DEG

1.7

D LAT 0.61 DEG

D LONG -1.72 DEG

MISSION /

FRAME NO.

TIME

S/C POSITION

ALT

50.94 KM

TILT ANG

1.15 DEG

INCID ANG

88.37 DEG

SWING ANG

288.39 DEG

N.DEV.

348.08 DEG

PHASE ANG

67.80 DEG

ALPHA

1.12 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0.79 DEG

AB 18.4 KM

A LONG -1.16 DEG

BC 4.6 KM

B LAT -0.30 DEG

CD 18.4 KM

B LONG -1.29 DEG

DA 4.6 KM

C LAT -0.27 DEG

TILT DISTANCE

C LONG -1.44 DEG

13.7

D LAT 0.33 DEG

D LONG -1.31 DEG

MISSION /

FRAME NO.

TIME

S/C POSITION

ALT

50.94 KM

TILT ANG

1.15 DEG

INCID ANG

68.92 DEG

EMISI ANG

1.19 DEG

PHASE ANG

67.80 DEG

ALPHA

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0.26 DEG

AB 18.3 KM

A LONG -1.02 DEG

BC 4.6 KM

B LAT -0.33 DEG

CD 18.4 KM

B LONG -1.15 DEG

DA 4.6 KM

C LAT -0.30 DEG

TILT DISTANCE

C LONG -1.30 DEG

12.2

D LAT 0.30 DEG

D LONG -1.17 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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PAGE 6:

MISSION / FRAME NO.	TIME YR, MO, DY HR, MIN, SEC	S/C POSITION ALT LAT LONG	S/C ORIENTATION TILT ANG SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMIS ANG PHASE ANG. ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE		
1129	660E25 130229.76	50.87 KM -0.030 KM/SEC -0.06 DEG -0.99 DEG	1.02 DEG 289.23 DEG 97.31 DEG 348.08 DEG	BB.36 DEG 66.78 DEG 1.05 DEG 67.80 DEG 0.98 DEG	-0.05 DEG -1.02 DEG		
MEDIUM RESOLUTION							
CORNER COORDINATE SIDE LENGTH							
A LAT 0.50 DEG	AB 41.2 KM	A LAT 0.23 DEG	AB 18.3 KM				
A LONG. -0.31 DEG	BC 35.1 KM	A LONG -0.89 DEG	BC 4.6 KM				
B LAT -0.83 DEG	CD 41.8 KM	B LAT -0.36 DEG	CD 18.3 KM				
B LONG -0.59 DEG	DA 35.1 KM	B LONG -1.01 DEG	DA 4.6 KM				
C LAT -0.60 DEG	TILT DISTANCE 1.4	C LAT -0.33 DEG	TIILT DISTANCE 10.6				
C LONG -1.72 DEG		C LONG -1.16 DEG					
D LAT 0.75 DEG		D LAT 0.27 DEG					
D LONG -1.44 DEG		D LONG -1.03 DEG					
HIGH RESOLUTION							
CORNER COORDINATE SIDE LENGTH							
A LAT 0.50 DEG	AB 41.2 KM	A LAT 0.20 DEG	AB 18.3 KM				
A LONG. -0.31 DEG	BC 35.0 KM	A LONG -0.75 DEG	BC 4.6 KM				
B LAT -0.86 DEG	CD 41.7 KM	B LAT -0.39 DEG	CD 18.3 KM				
B LONG -0.45 DEG	DA 35.1 KM	B LONG -0.87 DEG	DA 4.6 KM				
C LAT -0.63 DEG	TILT DISTANCE 1.2	C LAT -0.35 DEG	TIILT DISTANCE 9.3				
C LONG -1.58 DEG		C LONG -1.02 DEG					
D LAT 0.72 DEG		D LAT 0.24 DEG					
D LONG -1.30 DEG		D LONG -0.90 DEG					
MEDIUM RESOLUTION							
CORNER COORDINATE SIDE LENGTH							
A LAT 0.47 DEG	AB 41.2 KM	A LAT 0.20 DEG	AB 18.3 KM				
A LONG -0.17 DEG	BC 35.0 KM	A LONG -0.75 DEG	BC 4.6 KM				
B LAT -0.86 DEG	CD 41.7 KM	B LAT -0.39 DEG	CD 18.3 KM				
B LONG -0.45 DEG	DA 35.1 KM	B LONG -0.87 DEG	DA 4.6 KM				
C LAT -0.63 DEG	TILT DISTANCE 1.2	C LAT -0.35 DEG	TIILT DISTANCE 9.3				
C LONG -1.58 DEG		C LONG -1.02 DEG					
D LAT 0.72 DEG		D LAT 0.24 DEG					
D LONG -1.30 DEG		D LONG -0.90 DEG					
HIGH RESOLUTION							
CORNER COORDINATE SIDE LENGTH							
A LAT 0.47 DEG	AB 41.2 KM	A LAT 0.20 DEG	AB 18.3 KM				
A LONG -0.17 DEG	BC 35.0 KM	A LONG -0.75 DEG	BC 4.6 KM				
B LAT -0.86 DEG	CD 41.7 KM	B LAT -0.39 DEG	CD 18.3 KM				
B LONG -0.45 DEG	DA 35.1 KM	B LONG -0.87 DEG	DA 4.6 KM				
C LAT -0.63 DEG	TILT DISTANCE 1.2	C LAT -0.35 DEG	TIILT DISTANCE 9.3				
C LONG -1.58 DEG		C LONG -1.02 DEG					
D LAT 0.72 DEG		D LAT 0.24 DEG					
D LONG -1.30 DEG		D LONG -0.90 DEG					

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

1131 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR.MD.DY 660825 ALT 50.74 KM. SUN AZIM 88.33 DEG LATITUDE -0.11 DEG
 HR.MI.SEC 130234.23 ALT RT -0.0286 KM/SEC TILT AZIM 291.62 DEG INCID ANG 68.51 DEG LONGITUDE -0.75 DEG
 LAT -0.11 DEG SWING ANG 99.90 DEG EMISS ANG 0.77 DEG
 LONG -0.73 DEG N.DEV. 348.08 DEG PHASE ANG 67.80 DEG
 . ALPHA 0.70 DEG

MISSION/
FRAME NO.

1132 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR.MD.DY 660825 ALT 50.68 KM. SUN AZIM 88.32 DEG LATITUDE -0.13 DEG
 HR.MI.SEC 130236.45 ALT RT -0.0275 KM/SEC TILT AZIM 293.96 DEG INCID ANG 68.37 DEG LONGITUDE -0.61 DEG
 LAT -0.14 DEG SWING ANG 102.04 DEG EMISS ANG 0.63 DEG
 LONG -0.59 DEG N.DEV. 348.08 DEG PHASE ANG 67.80 DEG
 . ALPHA -0.57 DEG

MISSION/
FRAME NO.

1131 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR.MD.DY 660825 ALT 41.2 KM. SUN AZIM 88.33 DEG LATITUDE -0.11 DEG
 HR.MI.SEC 130234.23 ALT RT -0.0286 KM/SEC TILT AZIM 291.62 DEG INCID ANG 68.51 DEG LONGITUDE -0.75 DEG
 LAT -0.11 DEG SWING ANG 99.90 DEG EMISS ANG 0.77 DEG
 LONG -0.73 DEG N.DEV. 348.08 DEG PHASE ANG 67.80 DEG
 . ALPHA 0.70 DEG

MISSION/
FRAME NO.

1132 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR.MD.DY 660825 ALT 41.2 KM. SUN AZIM 88.32 DEG LATITUDE -0.13 DEG
 HR.MI.SEC 130236.45 ALT RT -0.0275 KM/SEC TILT AZIM 293.96 DEG INCID ANG 68.37 DEG LONGITUDE -0.61 DEG
 LAT -0.14 DEG SWING ANG 102.04 DEG EMISS ANG 0.63 DEG
 LONG -0.59 DEG N.DEV. 348.08 DEG PHASE ANG 67.80 DEG
 . ALPHA -0.57 DEG

MISSION/
FRAME NO.

1131 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR.MD.DY 660825 ALT 41.2 KM. SUN AZIM 88.33 DEG LATITUDE -0.11 DEG
 HR.MI.SEC 130234.23 ALT RT -0.0286 KM/SEC TILT AZIM 291.62 DEG INCID ANG 68.51 DEG LONGITUDE -0.75 DEG
 LAT -0.11 DEG SWING ANG 99.90 DEG EMISS ANG 0.77 DEG
 LONG -0.73 DEG N.DEV. 348.08 DEG PHASE ANG 67.80 DEG
 . ALPHA 0.70 DEG

MISSION/
FRAME NO.

1132 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR.MD.DY 660825 ALT 41.2 KM. SUN AZIM 88.32 DEG LATITUDE -0.13 DEG
 HR.MI.SEC 130236.45 ALT RT -0.0275 KM/SEC TILT AZIM 293.96 DEG INCID ANG 68.37 DEG LONGITUDE -0.61 DEG
 LAT -0.14 DEG SWING ANG 102.04 DEG EMISS ANG 0.63 DEG
 LONG -0.59 DEG N.DEV. 348.08 DEG PHASE ANG 67.80 DEG
 . ALPHA -0.57 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
1133

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
660E25 YR, MO, DY HR, MI, SEC	ALT 51.62 KM ALT RT -0.0264 KM/SEC LAT -1.17 DEG LONG -0.45 DEG	TILT ANG 2.48 DEG TILT AZIM 297.29 DEG SWING ANG 195.37 DEG N.DEV. 348.08 DEG	SUN AZIM 88.30 DEG INCID ANG 58.24 DEG EMISS ANG 7.50 DEG PHASE ANG 67.60 DEG ALPHA 0.43 DEG	LATITUDE -0.16 DEG LONGITUDE -0.47 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C 38 DEG	AB 41.2 KM
A LONG 0.24 DEG	BC 34.9 KM
B LAT -0.95 DEG	CD 41.4 KM
B LONG -2.14 DEG	DA 35.7 KM
C LAT -0.71 DEG	TILT DISTANCE 3.5
C LONG -1.17 DEG	
D LAT 0.62 DEG	
D LONG -0.89 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.11 DEG	AB 18.2 KM
A LONG -0.34 DEG	BC 4.6 KM
B LAT -0.47 DEG	CD 18.2 KM
B LONG -2.46 DEG	DA 4.6 KM
C LAT -0.44 DEG	TILT DISTANCE 5.1
C LONG -0.61 DEG	
D LAT 0.15 DEG	
D LONG -0.48 DEG	

MISSION/
FRAME NO.
1134

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
660E25 YR, MO, DY HR, MI, SEC	ALT 50.51 KM ALT RT -0.1269 KM/SEC LAT 2.13 DEG LONG -14.85 DEG	TILT ANG 11.04 DEG TILT AZIM 232.46 DEG SWING ANG 51.51 DEG N.DEV. 358.51 DEG	SUN AZIM 88.82 DEG INCID ANG 79.35 DEG EMISS ANG 11.40 DEG PHASE ANG 70.27 DEG ALPHA 9.00 DEG	LATITUDE 1.91 DEG LONGITUDE -15.14 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.24 DEG	AB 20.8 KM
A LONG -15.05 DEG	BC 5.4 KM
B LAT 1.56 DEG	CD 21.1 KM
B LONG -15.05 DEG	DA 5.2 KM
C LAT 1.56 DEG	TILT DISTANCE 15.6
C LONG -15.24 DEG	
D LAT 2.25 DEG	
D LONG -15.22 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.11 DEG	AB 18.2 KM
A LONG -0.34 DEG	BC 4.6 KM
B LAT -0.47 DEG	CD 18.2 KM
B LONG -2.46 DEG	DA 4.6 KM
C LAT -0.44 DEG	TILT DISTANCE 5.1
C LONG -0.61 DEG	
D LAT 0.15 DEG	
D LONG -0.48 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

1135 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 660E26 ALT 54.17 KM TILT ANG 13.37 DEG SUN AZIM 89.77 DEG LATITUDE 1.52 DEG
 HR, MI, SEC 232136.71 ALT RT -0.1171 KM/SEC TILT AZIM 215.32 DEG INCID ANG 78.20 DEG LONGITUDE -15.73 DEG
 LAT 1.86 DEG SWING ANG 33.28 DEG EMISS ANG 13.79 DEG
 LONG -15.48 DEG NDEV. 355.97 DEG PHASE ANG 70.27 DEG
 ALPHA 7.58 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.17 DEG AB 4.47 KM
 A LONG -15.12 DEG BC 4.27 KM
 B LAT C.70 DEG CD 4.93 KM
 B LONG -15.10 DEG DA 35.3 KM
 C LAT 3.65 DEG TILT DISTANCE
 C LONG -16.51 DEG 19.0
 D LAT 2.26 DEG
 D LONG -16.30 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.84 DEG AB 25.4 KM
 A LONG -15.63 DEG BC 5.3 KM
 B LAT 1.16 DEG CD 23.7 KM
 B LONG -15.65 DEG DA 4.9 KM
 C LAT 1.16 DEG TILT DISTANCE
 C LONG -16.84 DEG 44.5
 D LAT 1.84 DEG
 D LONG -15.79 DEG

MISSION/
FRAME NO.

1136 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 660E26 ALT 1327.75 KM TILT ANG 3.52 DEG SUN AZIM 273.67 DEG LATITUDE -5.41 DEG
 HR, MI, SEC 034E25.71 ALT RT 0.3532 KM/SEC TILT AZIM 359.65 DEG INCID ANG 49.34 DEG LONGITUDE 129.33 DEG
 LAT -8.11 DEG SWING ANG 353.72 DEG EMISS ANG 6.23 DEG
 LONG 129.35 DEG NDEV. 174.06 DEG PHASE ANG 69.91 DEG
 ALPHA -3.69 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -22.45 DEG AB 293.9 KM
 A LONG 1C5.02 DEG BC 144.7 KM
 B LAT 21.25 DEG CD 274.1 KM
 B LONG 111.20 DEG DA 91.7 KM
 C LAT 16.63 DEG TILT DISTANCE
 C LONG 151.72 DEG 4.9
 D LAT -25.58 DEG
 D LONG 145.33 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -13.02 DEG AB 489.8 KM
 A LONG 126.48 DEG BC 124.7 KM
 B LAT 3.11 DEG CD 489.2 KM
 B LONG 128.13 DEG DA 119.7 KM
 C LAT 2.68 DEG TILT DISTANCE
 C LONG 132.23 DEG 37.4
 D LAT -13.45 DEG
 D LONG 130.51 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION /

FRAME NO.

1137

YR. MO. DY

660526

HR. MI. SEC

061439.81

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT

52.59 KM

TILT ANG

44.18 DEG

SUN AZIM

88.70 DEG

LATITUDE

1.25 DEG

LONGITUDE

-19.86 DEG

INCID. ANG

78.82 DEG

EMISS. ANG

45.89 DEG

PHASE ANG

34.16 DEG

ALPHA

43.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT

1.50 DEG

AB

48.3 KM

A LONG

-18.84 DEG

BC

121.3 KM

B LAT

0.34 DEG

CD

117.5 KM

B LONG

-15.09 DEG

DA

67.3 KM

C LAT

-0.76 DEG

TILT DISTANCE

77.7

C LONG

-22.54 DEG

CLONG

-20.16 DEG

D LAT

2.57 DEG

DLAT

1.69 DEG

D LONG

-20.96 DEG

DLONG

-19.86 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT

4.815 KM

ALT

-0.0854 KM/SEC

TILT ANG

8.87 DEG

SUN AZIM

208.05 DEG

INCID. ANG

74.53 DEG

EMISS. ANG

9.12 DEG

PHASE ANG

70.22 DEG

ALPHA

4.15 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT

39.3 KM

AB

35.9 KM

A LONG

-16.75 DEG

BC

41.4 KM

B LAT

0.36 DEG

CD

31.9 KM

B LONG

-16.73 DEG

DA

12.4

C LAT

0.04 DEG

TILT DISTANCE

C LONG

-17.91 DEG

CLONG

1.40 DEG

D LAT

1.40 DEG

DLAT

1.04 DEG

D LONG

-17.80 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT

52.59 KM

TILT ANG

44.18 DEG

SUN AZIM

88.70 DEG

LATITUDE

1.25 DEG

LONGITUDE

-19.86 DEG

INCID. ANG

78.82 DEG

EMISS. ANG

45.89 DEG

PHASE ANG

34.16 DEG

ALPHA

43.35 DEG

CORNER COORDINATE

SIDE LENGTH

A LAT

1.50 DEG

AB

48.3 KM

A LONG

-18.84 DEG

BC

121.3 KM

B LAT

0.34 DEG

CD

117.5 KM

B LONG

-15.09 DEG

DA

67.3 KM

C LAT

-0.76 DEG

TILT DISTANCE

77.7

C LONG

-22.54 DEG

D LAT

2.57 DEG

D LONG

-20.96 DEG

D LONG

-19.86 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT

52.59 KM

TILT ANG

44.18 DEG

SUN AZIM

88.70 DEG

LATITUDE

1.25 DEG

LONGITUDE

-19.86 DEG

INCID. ANG

78.82 DEG

EMISS. ANG

45.89 DEG

PHASE ANG

34.16 DEG

ALPHA

43.35 DEG

CORNER COORDINATE

SIDE LENGTH

A LAT

1.50 DEG

AB

48.3 KM

A LONG

-18.84 DEG

BC

121.3 KM

B LAT

0.34 DEG

CD

117.5 KM

B LONG

-15.09 DEG

DA

67.3 KM

C LAT

-0.76 DEG

TILT DISTANCE

77.7

C LONG

-22.54 DEG

D LAT

2.57 DEG

D LONG

-20.96 DEG

D LONG

-19.86 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT

52.59 KM

TILT ANG

44.18 DEG

SUN AZIM

88.70 DEG

LATITUDE

1.25 DEG

LONGITUDE

-19.86 DEG

INCID. ANG

78.82 DEG

EMISS. ANG

45.89 DEG

PHASE ANG

34.16 DEG

ALPHA

43.35 DEG

CORNER COORDINATE

SIDE LENGTH

A LAT

1.50 DEG

AB

48.3 KM

A LONG

-18.84 DEG

BC

121.3 KM

B LAT

0.34 DEG

CD

117.5 KM

B LONG

-15.09 DEG

DA

67.3 KM

C LAT

-0.76 DEG

TILT DISTANCE

77.7

C LONG

-22.54 DEG

D LAT

2.57 DEG

D LONG

-20.96 DEG

D LONG

-19.86 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT

52.59 KM

TILT ANG

44.18 DEG

SUN AZIM

88.70 DEG

LATITUDE

1.25 DEG

LONGITUDE

-19.86 DEG

INCID. ANG

78.82 DEG

EMISS. ANG

45.89 DEG

PHASE ANG

34.16 DEG

ALPHA

43.35 DEG

CORNER COORDINATE

SIDE LENGTH

A LAT

1.50 DEG

AB

48.3 KM

A LONG

-18.84 DEG

BC

121.3 KM

B LAT

0.34 DEG

CD

117.5 KM

B LONG

-15.09 DEG

DA

67.3 KM

C LAT

-0.76 DEG

TILT DISTANCE

77.7

C LONG

-22.54 DEG

D LAT

2.57 DEG

D LONG

-20.96 DEG

D LONG

-19.86 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT

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MISSION/

FRAME NO.

1139

TIME

S/C POSITION

ALT 46°39' KM
ALT RT -0.0720 KM/SEC
LAT 0.59 DEG
LONG -19.20 DEG

S/C ORIENTATION

TILT ANG 12.13 DEG
TILT AZIM 193.40 DEG
SWING ANG 10.63 DEG
N.DEV. 356.92 DEG

PHOTO ILLUMINATION

SUN AZIM 88.49 DEG
INCID ANG 73.03 DEG
EMISS ANG 12.46 DEG
PHASE ANG 70.24 DEG

PRINCIPAL POINT

LATITUDE 0.427 DEG
LONGITUDE -19.328 DEG

MISSION/

FRAME NO.

1140

TIME

S/C POSITION

ALT 45.58 KM
ALT RT -0.0564 KM/SEC
LAT 0.38 DEG
LONG -20.15 DEG

S/C ORIENTATION

TILT ANG 10.72 DEG
TILT AZIM 190.67 DEG
SWING ANG 8.30 DEG
N.DEV. 357.44 DEG

PHOTO ILLUMINATION

SUN AZIM 88.44 DEG
INCID ANG 72.21 DEG
EMISS ANG 11.01 DEG
PHASE ANG 70.22 DEG

PRINCIPAL POINT

LATITUDE 0.10 DEG
LONGITUDE -20.20 DEG

MISSION/

FRAME NO.

1140

TIME

S/C POSITION

ALT 38.5 KM
ALT RT -0.0564 KM/SEC
LAT 0.38 DEG
LONG -20.80 DEG

S/C ORIENTATION

TILT ANG 15.1 DEG
TILT AZIM 29.7 KM
DA 29.7 KM
C LAT -0.57 DEG
C LONG -15.1
D LAT 0.71 DEG
D LONG -20.46 DEG

PHOTO ILLUMINATION

SUN AZIM 88.49 DEG
INCID ANG 73.03 DEG
EMISS ANG 12.46 DEG
PHASE ANG 70.24 DEG

PRINCIPAL POINT

LATITUDE 0.427 DEG
LONGITUDE -19.328 DEG

MISSION/

FRAME NO.

1140

TIME

S/C POSITION

ALT 34.8 KM
ALT RT -0.0564 KM/SEC
LAT 0.38 DEG
LONG -19.66 DEG

S/C ORIENTATION

TILT ANG 15.1 DEG
TILT AZIM 29.7 KM
DA 29.7 KM
C LAT -0.57 DEG
C LONG -15.1
D LAT 0.71 DEG
D LONG -20.46 DEG

PHOTO ILLUMINATION

SUN AZIM 88.49 DEG
INCID ANG 73.03 DEG
EMISS ANG 12.46 DEG
PHASE ANG 70.24 DEG

PRINCIPAL POINT

LATITUDE 0.427 DEG
LONGITUDE -19.328 DEG

MISSION/

FRAME NO.

1140

TIME

S/C POSITION

ALT 39.5 KM
ALT RT -0.0564 KM/SEC
LAT 0.38 DEG
LONG -19.91 DEG

S/C ORIENTATION

TILT ANG 17.2 DEG
TILT AZIM 190.67 DEG
SWING ANG 8.30 DEG
N.DEV. 357.44 DEG

PHOTO ILLUMINATION

SUN AZIM 88.44 DEG
INCID ANG 72.21 DEG
EMISS ANG 11.01 DEG
PHASE ANG 70.22 DEG

PRINCIPAL POINT

LATITUDE 0.10 DEG
LONGITUDE -20.20 DEG

MISSION/

FRAME NO.

1140

TIME

S/C POSITION

ALT 40.7 KM
ALT RT -0.0564 KM/SEC
LAT 0.38 DEG
LONG -19.69 DEG

S/C ORIENTATION

TILT ANG 17.2 DEG
TILT AZIM 190.67 DEG
SWING ANG 8.30 DEG
N.DEV. 357.44 DEG

PHOTO ILLUMINATION

SUN AZIM 88.44 DEG
INCID ANG 72.21 DEG
EMISS ANG 11.01 DEG
PHASE ANG 70.22 DEG

PRINCIPAL POINT

LATITUDE 0.10 DEG
LONGITUDE -20.20 DEG

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INDONESIA

FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1141	YR. MO. DY HR. MI. SEC	66C626 233224.61	ALT 49.13 KM ALT RT 0.08659 KM/SEC LAT -3.40 DEG LONG -4.22 DEG	SUN AZIM 0.53 DEG TILT ANG 24.76 DEG SWING ANG 192.87 DEG N.DEV. 348.11 DEG	SUN AZH 85.72 DEG INCID ANG . 54.63 DEG EMISS ANG 0.54 DEG PHASE ANG 54.90 DEG
					-5.39 DEG -4.21 DEG
					ALPHA -9.27 DEG

MEDIUM 'RESOLUTION		S.D. LENGTH	AB	40.1	M
CORNER	COORDINATE		BC	33.0	M
A LAT	-2.86 DEG		CD	43.1	M
A LONG	-3.52 DEG		DA	34.0	M
B LAT	-4.15 DEG		TILT DIST		
B LONG	-3.79 DEG				
C LAT	-3.52 DEG				
C LONG	-4.89 DEG				
D' LAT	-2.63 DEG				
D LONG	-4.62 DEG				

HIGH RESOLUTION		SIDE	L
CORNER	COORDINATE		
A LAT	-3.12 DEG	AB	4
A LONG	-4.08 DEG	BC	4
B LAT	-3.69 DEG	CD	1
B LONG	-4.20 DEG	DA	1
C LAT	-3.66 DEG	TILT	1
C LONG	-4.34 DEG		
D LAT	-3.09 DEG		
D LONG	-4.22 DEG		

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
0.53 DEG	85.72 DEG	-5.39 DEG
TILT AZIM	INCID ANG.	LONGITUDE
24.76 DEG	54.63 DEG	-4.21 DEG
SWING ANG	EWISS ANG	
192.87 DEG	0.54 DEG	
N.DEV.	PHASE ANG	
348.11 DEG	54.90 DEG	
	ALPHA	-9.27 DEG

SOLUTION		SIDE LENGTH	TILT DISTANCE
G	G	AB 17.0 KM	
G	G	BC 4.4 KM	
G	G	CD 17.0 KM	
G	G	DA 4.5 KM	
G	G		5.6
G	G		

INDIA

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	4.9-91 KN	TILT ANG 0-83 DEG	SUN AZIM 85.58 DEG
ALT.RT	0.0913 KM/SEC	TILT AZIM 63.30 DEG	INCID ANG 54.10 DEG
LAT.	-3.51 DEG	SWING ANG 231.44 DEG	EMISS ANG 0.85 DEG
LONG	-3.70 DEG	N.DEV. 348.14 DEG	PHASE ANG 54.90 DEG
			ALPHA -0.70 DEG

MEDIUM RESOLUTION		SIDE LE
CORNER	COORDINATE	
A LAT	-2° 56' DEG	AB 40°
A LONG	-2° 57' DEG	BC 34°
B LAT	-4° 27' DEG	CD 34°
B LONG	-3° 25' DEG	DA 34°
C LAT	-4° 04' DEG	TILT DI
C LONG	-A° 36' DEG	1°
D LAT	-2° 73'	
D LONG	-4° 09' DEG	

PHOTO ILLUMINATION	PRINCIPAL POINT		
	SUN AZIM	LATITUDE	LONGITUDE
INCID ANG	85.58 DEG	-3.53 DEG	
EMISS ANG	54.10 DEG	-3.68 DEG	
PHASE ANG	0.85 DEG		
AIR DRA	54.40 DEG		
	-0.70 DEG		

HIGH RESOLUTION		SIDE LENGTH	
CORNER	COORDINATE		
A LAT	-3°.22 DEG	AB	18.0 KM
A LONG	-3°.54 DEG	BC	4.5 KM
B LAT	-3°.80 DEG	CD	18.0 KM
B LONG	-3°.66 DEG	DA	4.5 KM
C LAT	-3°.77 DEG	TILT DISTANCE	
C LONG	-3°.81 DEG	8.8	
D LAT	-3°.19 DEG		
D LONG	-3°.69 DEG		

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MISSION/
FRAME NO.

1143 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 50°.73 KM TILT ANG 1°.38 DEG SUN AZIM 85°.43 DEG LATITUDE -3°.61 DEG
 HR, MI, SEC ALT RT 0°.0957 KM/SEC TILT AZIM 78°.15 DEG INCID ANG 53°.57 DEG LONGITUDE -3°.13 DEG
 LAT -3°.62 DEG SWING ANG 246°.33 DEG EMISS ANG 1°.33 DEG
 LONG -3°.17 DEG N.DEV. 348°.18 DEG PHASE ANG 54°.90 DEG
 ALPHA -1°.32 DEG

MISSION/
FRAME NO.

1144 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°.60 KM TILT ANG 1°.81 DEG SUN AZIM 85°.28 DEG LATITUDE -3°.72 DEG
 HR, MI, SEC ALT RT 0°.1001 KM/SEC TILT AZIM 84°.97 DEG INCID ANG 53°.03 DEG LONGITUDE -2°.58 DEG
 LAT -3°.73 DEG SWING ANG 263°.18 DEG EMISS ANG 1°.86 DEG
 LONG -2°.64 DEG N.DEV. 348°.22 DEG PHASE ANG 54°.90 DEG
 ALPHA -1°.86 DEG

MISSION/
FRAME NO.

1144 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°.60 KM TILT ANG 1°.81 DEG SUN AZIM 85°.28 DEG LATITUDE -3°.72 DEG
 HR, MI, SEC ALT RT 0°.1001 KM/SEC TILT AZIM 84°.97 DEG INCID ANG 53°.03 DEG LONGITUDE -2°.58 DEG
 LAT -3°.73 DEG SWING ANG 263°.18 DEG EMISS ANG 1°.86 DEG
 LONG -2°.64 DEG N.DEV. 348°.22 DEG PHASE ANG 54°.90 DEG
 ALPHA -1°.86 DEG

MISSION/
FRAME NO.

1144 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°.60 KM TILT ANG 1°.81 DEG SUN AZIM 85°.28 DEG LATITUDE -3°.72 DEG
 HR, MI, SEC ALT RT 0°.1001 KM/SEC TILT AZIM 84°.97 DEG INCID ANG 53°.03 DEG LONGITUDE -2°.58 DEG
 LAT -3°.73 DEG SWING ANG 263°.18 DEG EMISS ANG 1°.86 DEG
 LONG -2°.64 DEG N.DEV. 348°.22 DEG PHASE ANG 54°.90 DEG
 ALPHA -1°.86 DEG

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E NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1-YR, NO-DY	66°C26	ALT 52.53 ALT RT 0.1047 LAT -3.84 LONG -2.09	KH KM/SEC DEG DEG	SUN AZIM 85.52 DEG TILT AZIM 88.79 DEG SWING ANG 257.05 DEG NDEV. .-	SUN AZIM 85.52 DEG INCID ANG 52.48 DEG EMISS ANG 2.42 DEG PHASE ANG 54.90 DEG ALPHA -2.41 DEG
1-YR, HI-SEC	2333 0.11				LATITUDE -3.84 DEG LONGITUDE -2.02 DEG

NBB 33785 MEDICAL

CORNER	COORDINATE	SIDE LENGTH	CORNER	COORDINATE	SIDE LENGTH
A LAT	-2.26 DEG	AB 43.5 KM	A LAT	-3.55 DEG	AB 19.0 KM
A LONG	-1.27 DEG	BC 36.2 KM	A LONG	-1.88 DEG	BC 4.8 KM
B LAT	-4.66 DEG	CD 42.3 KM	B LAT	-4.16 DEG	CD 1.8 KM
B LONG	-1.56 DEG	DA 36.5 KM	B LONG	-2.01 DEG	DA 4.8 KM
C LAT	-4.40 DEG	TILT DISTANCE 3.2	C LAT	-4.12 DEG	TILT DISTANCE 24.9
C LONG	-2.73 DEG		C LONG	-2.16 DEG	
D LAT	-3.03 DEG		D LAT	-3.51 DEG	
D LONG	-2.45 DEG		D LONG	-2.04 DEG	

MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1146	660626 YR.MD.DY HR.HI.SEC	ALT ALT RT LAT LONG	53.53 0.1093 -3.95 -1.54 KM KM/SEC DEG DEG	SUN AZIM TILT ANG TILT AZIM SWING ANG N.DEV.	86.95 DEG 2.90 DEG 91.21 DEG 259.50 DEG 348.30 DEG
	2333 9.41			INCID ANG INCID ANG PHASE ANG	51.92 DEG 2.99 DEG 54.90 DEG
				PHASE ANG ALPHA	-2.97 DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	CORNER	COORDINATE	SIDE LENGTH
A LAT	-3.36 DEG	AB 44.5 KM	A LAT	-3.66 DEG	AB 19.3 KM
B LONG	-0.57 DEG	BC 36.9 KM	A LONG	-1.31 DEG	BC 4.8 KM
B LAT	-4.79 DEG	CD 43.0 KM	B LAT	-4.28 DEG	CD 19.3 KM
B LONG	-5.58 DEG	DA 37.2 KM	B LONG	-1.44 DEG	DA 4.9 KM
C LAT	-4.52 DEG	TILT DISTANCE	C LAT	-4.25 DEG	TILT DISTANCE
C LONG	-2.17 DEG	4.0	C LONG	-1.59 DEG	39.8
D LAT	-3.13 DEG		D LAT	-3.62 DEG	
D LONG	-1.88 DEG		D LONG	-1.46 DEG	

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HIGH RESOLUTION		SIDE LENGTH	TILT DISTANCE
CORNER	COORDINATE		
A LAT	-3°56' DEG	AB	19.3 KM
A LONG	-1°31' DEG	BC	4.8 KM
B LAT	-4°28' DEG	CD	19.3 KM
B LONG	-1°44' DEG	DA	4.9 KM
C LAT	-4°25' DEG		
C LONG	-1°59' DEG		
D LAT	-3°52' DEG		
D LONG	-1°46' DEG		

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MISSION/
FRAME NO.1147
YR. MO. DY
HR. MI. SECTIME
660E26S/C POSITION
ALT 54.59 KM
ALT RT 0.1140 KM/SEC
LAT -4.06 DEG
LONG -0.97 DEG

S/C ORIENTATION

TILT ANG 3.47. DEG
TILT AZIM 92.66 DEG
SWING ANG 261.20 DEG
N.DEV. 348.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	-3.46 DEG	AB 45.6 KM
A LONG	-0.07 DEG	BC 37.7 KM
B LAT	-4.93 DEG	CD 43.7 KM
B LONG	-0.38 DEG	DA 38.0 KM
C LAT	-4.65 DEG	TILT DISTANCE 4.8
C LONG	-1.59 DEG	
D LAT	-3.24 DEG	
D LONG	-1.30 DEG	

S/C POSITION

ALT 55.72 KM
ALT RT 0.1188 KM/SEC
LAT -4.18 DEG
LONG -0.39 DEG

S/C ORIENTATION

TILT ANG 4.06 DEG
TILT AZIM 94.08 DEG
SWING ANG 262.46 DEG
N.DEV. 348.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	-3.56 DEG	AB 46.8 KM
A LONG	0.54 DEG	BC 38.6 KM
B LAT	-5.07 DEG	CD 44.5 KM
B LONG	0.23 DEG	DA 38.9 KM
C LAT	-4.78 DEG	TILT DISTANCE 5.6
C LONG	-1.01 DEG	
D LAT	-3.35 DEG	
D LONG	-0.72 DEG	

PHOTO ILLUMINATION

SUN AZIM 84.78 DEG
INCID ANG 51.35 DEG
EMISS ANG 3.58 DEG
PHASE ANG 34.90 DEG
ALPHA -73.65 DEG

PHOTO ILLUMINATION

SUN AZIM 84.78 DEG
INCID ANG 51.35 DEG
EMISS ANG 3.58 DEG
PHASE ANG 34.90 DEG
ALPHA -73.65 DEGMISSION/
FRAME NO.1148
YR. MO. DY
HR. MI. SECTIME
660E26S/C POSITION
ALT 55.72 KM
ALT RT 0.1188 KM/SEC
LAT -4.18 DEG
LONG -0.39 DEG

S/C ORIENTATION

TILT ANG 4.06 DEG
TILT AZIM 94.08 DEG
SWING ANG 262.46 DEG
N.DEV. 348.40 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	-3.77 DEG	AB 19.8 KM
A LONG	-0.72 DEG	BC 4.9 KM
B LAT	-4.40 DEG	CD 19.6 KM
B LONG	-0.85 DEG	DA 5.0 KM
C LAT	-4.37 DEG	TILT DISTANCE 36.8
C LONG	-1.01 DEG	
D LAT	-3.74 DEG	
D LONG	-0.88 DEG	

PHOTO ILLUMINATION

SUN AZIM 84.59 DEG
INCID ANG 50.76 DEG
EMISS ANG 4.19 DEG
PHASE ANG 54.90 DEG
ALPHA -4.13 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	-3.88 DEG	AB 20.2 KM
A LONG	-0.11 DEG	BC 5.1 KM
B LAT	-4.53 DEG	CD 20.1 KM
B LONG	-0.25 DEG	DA 5.1 KM
C LAT	-4.50 DEG	TILT DISTANCE 43.1
C LONG	-0.41 DEG	
D LAT	-3.85 DEG	
D LONG	-0.28 DEG	

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1149	YR, MO, DY HR, MI, SEC	66C627 025340.21	ALT RT -0.0577 KM/SEC LAT 0.44 DEG LONG -24.21 DEG	TILT ANG 9.47 DEG TILT AZIM 195.99 DEG SWING ANG 13.64 DEG N.DEV. 357.44 DEG	SUN AZIM: 88.47 DEG INCID ANG 72.80 DEG EMISS ANG 9.72 DEG PHASE ANG 70.12 DEG ALPHA 2.44 DEG	LATITUDE 0.19 DEG LONGITUDE -24.28 DEG
MEDIUM RESOLUTION						
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION		HIGH RESOLUTION	
A LAT	C 77 DEG	AB 39.3 KM	A LAT	0.47 DEG	A LAT	0.47 DEG
A LONG	-23.74 DEG	BC 35.3 KM	A LONG	-24.20 DEG	B LAT	4.4 KM
B LAT	-C 52 DEG	CD 40.2 KM	B LAT	-0.11 DEG	C LAT	17.4 KM
B LONG	-23.73 DEG	DA 30.8 KM	B LONG	-24.22 DEG	D LAT	4.2 KM
C LAT	-C 50 DEG	TILT DISTANCE 13.3	C LAT	-0.10 DEG	C LONG	24.36 DEG
C LONG	-24.89 DEG		D LAT	0.47 DEG	D LONG	-24.33 DEG
D LAT	0.82 DEG					
D LONG	-24.76 DEG					
MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1150	YR, MO, DY HR, MI, SEC	660627 061638.21	ALT RT -0.1071 KM/SEC LAT 1.44 DEG LONG -30.75 DEG	TILT ANG 14.63 DEG TILT AZIM 143.18 DEG SWING ANG 320.93 DEG N.DEV. 358.71 DEG	SUN AZIM: 88.68 DEG INCID ANG 77.23 DEG EMISS ANG 15.10 DEG PHASE ANG 86.22 DEG ALPHA -9.28 DEG	LATITUDE 1.07 DEG LONGITUDE -30.47 DEG
MEDIUM RESOLUTION						
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION		HIGH RESOLUTION	
A LAT	C 78 DEG	AB 50.7 KM	A LAT	1.40 DEG	A LAT	1.40 DEG
A LONG	-25.81 DEG	BC 43.7 KM	A LONG	-30.38 DEG	B LAT	5.4 KM
B LAT	0.11 DEG	CD 44.7 KM	B LAT	0.70 DEG	C LAT	20.6 KM
B LONG	-29.72 DEG	DA 36.5 KM	B LONG	-30.38 DEG	D LAT	5.0 KM
C LAT	0.31 DEG	TILT DISTANCE 20.9	C LAT	0.72 DEG	C LONG	-30.56 DEG
C LONG	-31.14 DEG		D LAT	1.40 DEG	D LONG	-30.54 DEG
D LAT	1.78 DEG					
D LONG	-31.01 DEG					

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MISSION/

FRAME NO.

1151
YR.MD.DY
HR.MI.SEC660627
194724.61

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 43.93 KM
ALT RT -0.0315 KM/SEC
LAT -0.49 DEG
LONG -23.66 DEGTILT ANG 14.92 DEG
TILT AZIM 1.41 DEG
SWING ANG 188.54 DEG
N.OEV. 7.08 DEGSUN AZIM 88.33 DEG
INCID ANG 68.68 DEG
EMISS ANG 15.30 DEG
PHASE ANG 70.27 DEG

ALPHA -2.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0.70 DEG AB 39.7 KM
A LONG -23.14 DEG BC 28.3 KM
B LAT -0.61 DEG CD 38.5 KM
B LONG -23.10 DEG DA 25.4 KM
C LAT -0.72 DEG TILT DISTANCE
C LONG -24.03 DEG 21.3
D LAT C.52 DEG
D LONG -24.29 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0.20 DEG AB 17.1 KM
A LONG -23.61 DEG BC 3.9 KM
B LAT -0.36 DEG CD 17.0 KM
B LONG -23.55 DEG DA 4.3 KM
C LAT -0.37 DEG TILT DISTANCE
C LONG -23.68 DEG 62.0
D LAT 0.18 DEG
D LONG -23.75 DEG

MISSION/

FRAME NO.

1153
YR.MD.DY
HR.MI.SEC660627
233054.61

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 52.10 KM
ALT RT -0.0818 KM/SEC
LAT 0.70 DEG
LONG -36.95 DEGTILT ANG 4.73 DEG
TILT AZIM 275.23 DEG
SWING ANG 96.54 DEG
N.OEV. 1.33 DEGSUN AZIM 88.61 DEG
INCID ANG 75.13 DEG
EMISS ANG 4.87 DEG
PHASE ANG 70.29 DEG

ALPHA 4.84 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 1.41 DEG AB 41.4 KM
A LONG -36.52 DEG BC 36.1 KM
B LAT 0.05 DEG CD 43.9 KM
B LONG -36.49 DEG DA 36.4 KM
C LAT -0.02 DEG TILT DISTANCE
C LONG -37.68 DEG 6.6
D LAT 1.43 DEG
D LONG -37.72 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 1.03 DEG AB 18.8 KM
A LONG -37.02 DEG BC 4.7 KM
B LAT 0.41 DEG CD 18.9 KM
B LONG -37.01 DEG DA 4.8 KM
C LAT 0.40 DEG TILT DISTANCE
C LONG -37.16 DEG 50.3
D LAT 1.03 DEG
D LONG -37.18 DEG

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MISSION/

FRAME NO.

YR. MO. DY
HR. MI. SECTIME
660E27
2331 4.61

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	51.31 KM	TILT ANG 4.12 DEG	SUN AZIM 88.58 DEG	LATITUDE 0.58 DEG
ALT RT	-0.0767 KM/SEC	TILT AZIM 274.24 DEG	INCID ANG 74.51 DEG	LONGITUDE -36.48 DEG
LAT	0.58 DEG	SWING ANG 95.53 DEG	EMISS ANG 4.25 DEG	
LONG	-36.36 DEG	N.DEV.	PHASE ANG 70.29 DEG	
			ALPHA	4.22 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.27 DEG	AB 40.9 KM
A LONG -35.51 DEG	BC 35.5 KM
B LAT -0.08 DEG	CD 43.1 KM
B LONG -35.88 DEG	DA 35.7 KM
C LAT -0.14 DEG	TILT DISTANCE 5.7
C LONG -37.05 DEG	
D LAT 1.28 DEG	
D LONG -37.09 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	0.89 DEG
A LONG	-36.41 DEG
B LAT	0.28 DEG
B LONG	-36.39 DEG
C LAT	0.28 DEG
C LONG	-36.55 DEG
D LAT	0.89 DEG
D LONG	-36.56 DEG

MISSION/

FRAME NO.

YR. MO. DY
HR. MI. SECTIME
660E27
233114.51

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	50.57 KM	TILT ANG 3.52 DEG	SUN AZIM 88.54 DEG	LATITUDE 0.45 DEG
ALT RT	-0.0717 KM/SEC	TILT AZIM 272.91 DEG	INCID ANG 73.90 DEG	LONGITUDE -35.87 DEG
LAT	0.45 DEG	SWING ANG 94.20 DEG	EMISS ANG 3.63 DEG	
LONG	-35.76 DEG	N.DEV.	PHASE ANG 70.29 DEG	
			ALPHA	3.62 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.13 DEG	AB 40.4 KM
A LONG -35.31 DEG	BC 35.0 KM
B LAT -0.20 DEG	CD 42.2 KM
B LONG -25.28 DEG	DA 35.1 KM
C LAT -0.26 DEG	TILT DISTANCE 4.9
C LONG -36.43 DEG	
D LAT 1.14 DEG	
D LONG -36.46 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT	0.76 DEG
A LONG	-35.80 DEG
B LAT	0.16 DEG
B LONG	-35.78 DEG
C LAT	0.15 DEG
C LONG	-35.94 DEG
D LAT	0.75 DEG
D LONG	-35.95 DEG

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• FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
SWING ANG
N.DEV.PRINCIPAL POINT
LATITUDE
LONGITUDEPHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMIS ANGPHASE ANG
ALPHA

0°32 DEG

-35.25 DEG

86.50 DEG

73.29 DEG

3.00 DEG

70.29 DEG

3.00 DEG

MISSION/

FRAME NO.

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
SWING ANG
N.DEV.PRINCIPAL POINT
LATITUDE
LONGITUDEPHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMIS ANGPHASE ANG
ALPHA

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
SWING ANG
N.DEV.PRINCIPAL POINT
LATITUDE
LONGITUDEPHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMIS ANGPHASE ANG
ALPHA

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

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DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

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DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

-23.23 DEG

4.5 KM

18.0 KM

4.5 KM

31.0

DEG

DEG

DEG

DEG

0°32 DEG

-35.25 DEG

86.50 DEG

57.90 DEG

1.74 DEG

58.53 DEG

-0.64 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

1158

YR, MO, DY

660628

HR, MI, SEC

062620.39

S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION		
ALT	50.83 KM	TILT ANG	1.77 DEG	SUN AZIM	86.24 DEG	LATITUDE	-3.09 DEG	
ALT RT	0.0672 KM/SEC	TILT AZIM	152.30 DEG	INCID ANG	57.77 DEG	LONGITUDE	-23.10 DEG	
LAT	-3.04 DEG	SWING ANG	319.51 DEG	EMISS ANG	1.82 DEG			
LONG	-23.12 DEG	N.DEV.	347.22 DEG	PHASE ANG	58.53 DEG			
				ALPHA	-0.77 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH-RESOLUTION	
A LAT	-2.55 DEG	AB	41.8 KM	A LAT	-2.81 DEG
A LONG	-22.37 DEG	BC	35.5 KM	A LONG	-22.96 DEG
B LAT	-3.50 DEG	CD	41.2 KM	B LAT	-3.40 DEG
B LONG	-22.67 DEG	DA	34.8 KM	B LONG	-23.09 DEG
C LAT	-3.63 DEG	TILT DISTANCE		C LAT	-3.37 DEG
C LONG	-23.81 DEG	2.4		C LONG	-23.24 DEG
D LAT	-2.31 DEG			D LAT	-2.78 DEG
D LONG	-23.50 DEG			D LONG	-23.10 DEG

MISSION/

FRAME NO.

1159

YR, MO, DY

660628

HR, MI, SEC

062622.57

S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION		
ALT	50.98 KM	TILT ANG	1.86 DEG	SUN AZIM	86.21 DEG	LATITUDE	-3.12 DEG	
ALT RT	0.0683 KM/SEC	TILT AZIM	149.11 DEG	INCID ANG	57.64 DEG	LONGITUDE	-22.95 DEG	
LAT	-3.07 DEG	SWING ANG	316.32 DEG	EMISS ANG	1.91 DEG			
LONG	-22.99 DEG	N.DEV.	347.23 DEG	PHASE ANG	58.53 DEG			
				ALPHA	-0.90 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION	
A LAT	-2.58 DEG	AB	42.0 KM	A LAT	-2.84 DEG
A LONG	-22.24 DEG	BC	35.6 KM	A LONG	-22.82 DEG
B LAT	-3.53 DEG	CD	41.3 KM	B LAT	-3.43 DEG
B LONG	-22.53 DEG	DA	34.9 KM	B LONG	-22.95 DEG
C LAT	-3.66 DEG	TILT DISTANCE		C LAT	-3.39 DEG
C LONG	-23.68 DEG	2.6		C LONG	-23.10 DEG
D LAT	-2.33 DEG			D LAT	-2.80 DEG
D LONG	-23.36 DEG			D LONG	-22.97 DEG

PRINCIPAL POINT			
SUN AZIM	86.24 DEG	LATITUDE	-3.09 DEG
INCID ANG	57.77 DEG	LONGITUDE	-23.10 DEG

HIGH-RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PRINCIPAL POINT																											
A LAT	-2.81 DEG	AB	18.3 KM	SUN AZIM	86.21 DEG																										
A LONG	-22.96 DEG	BC	4.6 KM	B LAT	-3.40 DEG	CD	18.3 KM	B LONG	-23.09 DEG	DA	4.6 KM	C LAT	-3.37 DEG	TILT DISTANCE			C LONG	-23.24 DEG	18.8			D LAT	-2.78 DEG				D LONG	-23.10 DEG			
B LAT	-3.40 DEG	CD	18.3 KM																												
B LONG	-23.09 DEG	DA	4.6 KM																												
C LAT	-3.37 DEG	TILT DISTANCE																													
C LONG	-23.24 DEG	18.8																													
D LAT	-2.78 DEG																														
D LONG	-23.10 DEG																														

PRINCIPAL POINT			
SUN AZIM	86.21 DEG	LATITUDE	-3.12 DEG
INCID ANG	57.64 DEG	LONGITUDE	-22.95 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
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MISSION/
FRAME NO.

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR, MO, DY HR, MI, SEC	6600E28 062624.75	ALT 51.13 KM ALT RT 0.6694 KM/SEC LAT -3.10 DEG LONG -22.86 DEG	TILT ANG 1.95 DEG TILT AZIM 146.21 DEG SWING ANG 313.43 DEG N.DEV. 347.24 DEG	SUN AZIM 86.18 DEG INCID ANG 57.51 DEG EMISS ANG 2.01 DEG PHASE ANG 58.53 DEG ALPHA -1.04 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -2.60 DEG A LONG -22.10 DEG B LAT -3.96 DEG B LONG -22.39 DEG C LAT -3.69 DEG C LONG -23.54 DEG D LAT -2.36 DEG D LONG -23.23 DEG	AB 42.1 KM BC 35.7 KM CD 41.4 KM DA 35.0 KM TILT DISTANCE 2.7	CORNER COORDINATE SIDE LENGTH A LAT -2.86 DEG AB 18.5 KM A LONG -22.69 DEG BC 4.7 KM B LAT -3.46 DEG CD 18.4 KM B LONG -22.82 DEG DA 4.6 KM C LAT -3.42 DEG TILT DISTANCE 20.7 C LONG -22.97 DEG D LAT -2.83 DEG D LONG -22.83 DEG

MEDIUM RESOLUTION

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR, MO, DY HR, MI, SEC	6600E28. 062626.94	ALT 51.28 KM ALT RT 0.0705 KM/SEC LAT -3.12 DEG LONG -22.73 DEG	TILT ANG 2.05 DEG TILT AZIM 143.57 DEG SWING ANG 310.79 DEG N.DEV. 347.25 DEG	SUN AZIM 86.15 DEG INCID ANG 57.37 DEG EMISS ANG 2.11 DEG PHASE ANG 58.53 DEG ALPHA -1.17 DEG

MISSION/
FRAME NO.

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR, MO, DY HR, MI, SEC	6600E28. 062626.94	ALT 51.28 KM ALT RT 0.0705 KM/SEC LAT -3.12 DEG LONG -22.73 DEG	TILT ANG 2.05 DEG TILT AZIM 143.57 DEG SWING ANG 310.79 DEG N.DEV. 347.25 DEG	SUN AZIM 86.15 DEG INCID ANG 57.37 DEG EMISS ANG 2.11 DEG PHASE ANG 58.53 DEG ALPHA -1.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -2.63 DEG A LONG -21.96 DEG B LAT -3.99 DEG B LONG -22.26 DEG C LAT -3.72 DEG C LONG -23.41 DEG D LAT -2.38 DEG D LONG -23.09 DEG	AB 42.3 KM BC 35.8 KM CD 41.5 KM DA 35.1 KM TILT DISTANCE 2.8	CORNER COORDINATE SIDE LENGTH A LAT -2.89 DEG AB 18.5 KM A LONG -22.55 DEG BC 4.7 KM B LAT -3.59 DEG CD 18.5 KM B LONG -22.68 DEG DA 4.6 KM C LAT -3.45 DEG TILT DISTANCE 21.7 C LONG -22.84 DEG D LAT -2.86 DEG D LONG -22.70 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.1164
YR, MO, DY
HR, MI, SECTIME
660628
062633.57S/C POSITION
ALT 51.76 KM
ALT RT 0.0738 KM/SEC
LAT -3.20 DEG
LONG -22.33 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -2.71 DEG
A LONG -21.54 DEG
B LAT -4.09 DEG
B LONG -21.84 DEG
C LAT -3.81 DEG
C LONG -23.00 DEG
D LAT -2.46 DEG
D LONG -22.69 DEG

HIGH RESOLUTION

S/C ORIENTATION
TILT ANG 2.37 DEG
TILT AZIM 136.96 DEG
SWING ANG 304.20 DEG
N.DEV. 347.27 DEG
PHASE ANG 58.53 DEG
ALPHA -1.58 DEGMISSION/
FRAME NO.

1165

YR, MO, DY
HR, MI, SECTIME
660628
062635.80S/C POSITION
ALT 51.93 KM
ALT RT 0.0750 KM/SEC
LAT -3.23 DEG
LONG -22.20 DEGPHOTO ILLUMINATION
SUN AZIM 86.06 DEG
INCID ANG 56.97 DEG
EMISS ANG 2.44 DEG
PHASE ANG 58.53 DEG
ALPHA -1.58 DEGCORNER COORDINATE
A LAT -2.97 DEG
A LONG -22.14 DEG
B LAT -3.57 DEG
B LONG -22.28 DEG
C LAT -3.54 DEG
C LONG -22.43 DEG
D LAT -2.94 DEG
D LONG -22.29 DEGPHOTO ILLUMINATION
SUN AZIM 86.02 DEG
INCID ANG 56.84 DEG
EMISS ANG 2.55 DEG
PHASE ANG 58.53 DEG
ALPHA -1.71 DEG

MEDIUM RESOLUTION

CORNER COORDINATE
A LAT -3.40 DEG
A LONG -22.00 DEG
B LAT -3.60 DEG
B LONG -22.14 DEG
C LAT -3.57 DEG
C LONG -22.29 DEG
D LAT -2.97 DEG
D LONG -22.15 DEGPHOTO ILLUMINATION
SUN AZIM 86.02 DEG
INCID ANG 56.84 DEG
EMISS ANG 2.55 DEG
PHASE ANG 58.53 DEG
ALPHA -1.71 DEG

HIGH RESOLUTION

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

TIME

YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 52.10 KM 0.0761 KM/SEC	TIILT ANG 2.59 DEG TILT AZIM 133.45 DEG SWING ANG 300.70 DEG N.DEV. 347.29 DEG	SUN AZIM 85.99 DEG INCID ANG 56.70 DEG EMISS ANG 2.67 DEG PHASE ANG 58.53 DEG 'ALPHA -1.85 DEG	LATITUDE -3.31 DEG LONGITUDE -22.01 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.76 DEG A LONG -21.26 DEG B LAT -4.15 DEG B LONG -21.56 DEG C LAT -3.87 DEG C LONG -22.73 DEG D LAT -2.52 DEG D LONG -22.41 DEG	AB 43.2 KM BC 36.4 KM CD 42.0 KM DA 35.7 KM TIILT DISTANCE 3.6

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.76 DEG A LONG -21.26 DEG B LAT -4.15 DEG B LONG -21.56 DEG C LAT -3.87 DEG C LONG -22.73 DEG D LAT -2.52 DEG D LONG -22.41 DEG	AB 43.2 KM BC 36.4 KM CD 42.0 KM DA 35.7 KM TIILT DISTANCE 3.6

MISSION/

FRAME NO.

TIME

YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 52.27 KM 0.0772 KM/SEC	TIILT ANG 2.71 DEG TILT AZIM 131.91 DEG SWING ANG 299.17 DEG N.DEV. 347.30 DEG	SUN AZIM 85.96 DEG INCID ANG 56.56 DEG EMISS ANG 2.79 DEG PHASE ANG 58.53 DEG 'ALPHA -1.99 DEG	LATITUDE -3.34 DEG LONGITUDE -21.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.78 DEG A LONG -21.12 DEG B LAT -4.18 DEG B LONG -21.42 DEG C LAT -3.90 DEG C LONG -22.59 DEG D LAT -2.54 DEG D LONG -22.27 DEG	AB 43.4 KM BC 36.5 KM CD 42.1 KM DA 35.8 KM TIILT DISTANCE 3.8

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.78 DEG A LONG -21.12 DEG B LAT -4.18 DEG B LONG -21.42 DEG C LAT -3.90 DEG C LONG -22.59 DEG D LAT -2.54 DEG D LONG -22.27 DEG	AB 43.4 KM BC 36.5 KM CD 42.1 KM DA 35.8 KM TIILT DISTANCE 3.8

04/10/71

04/10/71

04/10/71

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MISSION/
FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1168	660E28 YR, MO, DY HR, MI, SEC	ALT RT 52.45 KM 0.0784 KM/SEC LAT -3.31 DEG LONG -21.79 DEG	ALT ANG 2.83 DEG TILT AZIM 130.49 DEG SWING ANG 297.75 DEG N.DEV. 347.31 DEG	SUN AZIM 85.92 DEG INCID ANG 56.43 DEG EMISS ANG 2.92 DEG PHASE ANG 58.53 DEG ALPHA -2.12 DEG	LATITUDE -3.37 DEG LONGITUDE -21.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -2.81 DEG A LONG -20.97 DEG	AB 43.5 KM BC 36.7 KM	CORNER COORDINATE SIDE LENGTH A LAT -3.08 DEG AB 19.0 KM A LONG -21.58 DEG BC 4.8 KM
B LAT -4.21 DEG B LONG -21.28 DEG	CD 42.2 KM DA 36.0 KM	B LAT -3.69 DEG CD 18.9 KM B LONG -21.72 DEG DA 4.7 KM
C LAT -3.93 DEG C LONG -22.45 DEG	TILT DISTANCE DE 3.9	C LAT -3.66 DEG TILT DISTANCE CE 30.0
D LAT -2.57 DEG D LONG -22.14 DEG		C LONG -21.87 DEG D LAT -3.05 DEG D LONG -21.74 DEG

MISSION/
FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1169	660E28 YR, MO, DY HR, MI, SEC	ALT RT 52.63 KM 0.0795 KM/SEC LAT -3.34 DEG LONG -21.66 DEG	ALT ANG 2.95 DEG TILT AZIM 129.17 DEG SWING ANG 296.44 DEG N.DEV. 347.32 DEG	SUN AZIM 85.89 DEG INCID ANG 56.29 DEG EMISS ANG 3.04 DEG PHASE ANG 58.53 DEG ALPHA -2.26 DEG	LATITUDE -3.49 DEG LONGITUDE -21.59 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -2.84 DEG A LONG -20.83 DEG	AB 43.7 KM BC 36.8 KM	CORNER COORDINATE SIDE LENGTH A LAT -3.11 DEG AB 19.0 KM A LONG -21.44 DEG BC 4.8 KM
B LAT -4.25 DEG B LONG -21.13 DEG	CD 42.3 KM DA 36.1 KM	B LAT -3.72 DEG CD 18.9 KM B LONG -21.58 DEG DA 4.8 KM
C LAT -3.96 DEG C LONG -22.32 DEG	TILT DISTANCE DE 4.1	C LAT -3.69 DEG TILT DISTANCE CE 31.3
D LAT -2.60 DEG D LONG -22.00 DEG		C LONG -21.73 DEG D LAT -3.08 DEG D LONG -21.60 DEG

UNABRIDGED OBSERVER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSIONS
FRAME NO.
11170 YR-MO-
ER.MI.

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
660E28	ALT 52.81	KH TILT ANG 3.08 DEG	SUN AZIN 85.86 DEG	LATITUDE -3.43 DEG
062E47.11	ALT RT 0.0806 KM/SEC	TILT AZIN 127.95 DEG	INCID ANG 56.15 DEG	LONGITUDE -21.45 DEG
	LAT -3.37 DEG	SWING ANG 295.24 DEG	EMISS ANG 3.17 DEG	
	LONG -21.52 DEG	N.DEV. 347.33 DEG	PHASE ANG 58.53 DEG	
				ALPHA -2.40 DEG

CORNER	COORDINATE	SIDE	RESOLUTION
A LAT	-7° 26' DEG	AB	1000
A LONG	-60° 68' DEG	BC	1000
B LAT	-4° 26' DEG	CD	1000
B LONG	-20° 59' DEG	DA	1000
C LAT	-3° 59' DEG	TILLI	1000
C LONG	-22° 18' DEG		
D LAT	-2° 62' DEG		
D LONG	-21° 06' DEG		

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	-3.14 DEG	AB 19.1
A LONG	-21.00 DEG	BC 4.8
B LAT	-3.75 DEG	CD 19.0
B LONG	-21.04 DEG	DA 4.8
C LAT	-3.72 DEG	TI LT DIS 32.7
C LONG	-21.59 DEG	
D LAT	-3.11 DEG	
D LONG	-21.45 DEG	

SIDE	LENGTH	TILT DISTANCE
AB	19.1	KH
BC	4.8	KM
CD	19.0	KW
DA	4.8	KH
		32.7

MISSION /

S/C POSITION	S/C ORIENTATION
ALT 52.99 KM	TILT ANG 3.20 DEG
ALT RT 0.0818 KM/SEC	TILT AZIM 126.84 DEG
LAT -3.40 DEG	SWING ANG 294.12 DEG
LONG -21.38 DEG	N.DEV. 347.34 DEG

PRINCIPAL POINT
LATITUDE -3.46 DEG
LONGITUDE -21.31 DEG

MEDIUM RESOLUTION		SIDE LENGTH	KM
CORNER	COORDINATE	DEG	
A LAT	-2°.89	DEG	AB 44.1
A LONG	-20°.54	DEG	BC 37.1
B LAT	-4°.31	DEG	CD 42.5
B LONG	-20°.85	DEG	DA 36.4
C LAT	-4°.02	DEG	TILT DISTANCE
C LONG	-22°.04	DEG	4.4
D LAT	-2°.65	DEG	
D LONG	-21°.72	DEG	

HIGH RESOLUTION	COORDINATE	SIDE LENGTH
1. LAT	-3-17 DEG	AB 19.2 KM
1. LONG	-21.16 DEG	BC 4.8 KM
1. LAT	-3-78 DEG	CD 19.1 KM
1. LONG	-21.30 DEG	DA 4.8 KM
1. LAT	-3-75 DEG	TILT DISTANCE
1. LONG	-21-45 DEG	34.0
1. LAT	-3-13 DEG	
1. LONG	-21-31 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO. 1172 TIME: 660628
YR, MO, DY 022551.70 HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	53.18 KM	TILT ANG 3.33 DEG	SUN AZIM 85°.79 DEG	LATITUDE -3.49 DEG
ALT RT	0.0830 KM/SEC	TILT AZIM 125°.80 DEG	INCID ANG 55°.87 DEG	LONGITUDE -21.16 DEG
LAT	-3.43 DEG	SWING ANG 293.09 DEG	EMISS ANG 3.43 DEG	
LONG	-21.25 DEG	NDEV. 347.35 DEG	PHASE ANG 58°.53 DEG	
			ALPHA -2.68 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.92 DEG	AB 44.3 KM
A LONG -20.39 DEG	BC 37°.2 KM
B LAT -4.35 DEG	CD 42°.7 KM
B LONG -20.70 DEG	DA 36°.5 KM
C LAT -4.05 DEG	TILT DISTANCE 4.6
C LONG -21.90 DEG	
D LAT -2.68 DEG	
D LONG -21.57 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -3.19 DEG	AB 19.2 KM
A LONG -21.02 DEG	BC 4.8 KM
B LAT -3.81 DEG	CD 19.1 KM
B LONG -21.15 DEG	DA 4.8 KM
C LAT -3.78 DEG	TILT DISTANCE 35.4
C LONG -21.31 DEG	
D LAT -3.16 DEG	
D LONG -21.17 DEG	

MISSION/

FRAME NO. 1173 TIME: 660628
YR, MO, DY 132156.71 HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	54°.74 KM	TILT ANG 24.29 DEG	SUN AZIM 84°.76 DEG	LATITUDE -4.53 DEG
ALT RT	0.0991 KM/SEC	TILT AZIM 139°.23 DEG	INCID ANG 53°.70 DEG	LONGITUDE -22.39 DEG
LAT	-3.91 DEG	SWING ANG 313°.82 DEG	EMISS ANG 25°.11 DEG	
LONG	-22.92 DEG	NDEV. 357.46 DEG	PHASE ANG 70°.30 DEG	
			ALPHA -18.59 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -3.79 DEG	AB 61°.5 KM
A LONG -21.63 DEG	BC 53°.4 KM
B LAT -5.82 DEG	CD 46.8 KM
B LONG -21.46 DEG	DA 39.1 KM
C LAT -5.29 DEG	TILT DISTANCE 36.1
C LONG -23.15 DEG	
D LAT -3.77 DEG	
D LONG -22.92 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -4.18 DEG	AB 23°.3 KM
A LONG -22.28 DEG	BC 6°.2 KM
B LAT -4.95 DEG	CD 22.5 KM
B LONG -22.30 DEG	DA 5°.4 KM
C LAT -4.91 DEG	TILT DISTANCE 74.4
C LONG -22.50 DEG	
D LAT -4.57 DEG	
D LONG -22.46 DEG	

LUNAR CRBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.
1174
YR, MO, DY
HR, MI, SEC
66CE28
20CE C.71

TIME
ALT RT
LAT
LONG
66CE28
0:1567
2.41
+57.12

S/C POSITION
ALT 72.12 KM
TILT ANG 17.57 DEG
TILT AZIM 233.47 DEG
SWING ANG 52.36 DEG
N.DEV. 357.18 DEG

S/C ORIENTATION
ALT 72.12 KM
TILT ANG 17.57 DEG
TILT AZIM 148.40 DEG
SWING ANG 323.88 DEG
N.DEV. 357.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.85 DEG	AB 58.3 KM
A LONG -56.92 DEG	BC 60.7 KM
B LAT 0.92 DEG	CD 70.9 KM
B LONG -56.89 DEG	DA 50.4 KM
C LAT 0.69 DEG	TILT DISTANCE 25.4
C LONG -56.88 DEG	
D LAT 3.01 DEG	
D LONG -58.58 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.40 DEG	AB 27.6 KM
A LONG -57.60 DEG	BC 7.4 KM
B LAT 1.49 DEG	CD 28.3 KM
B LONG -57.64 DEG	DA 6.8 KM
C LAT 1.48 DEG	TILT DISTANCE 93.7
C LONG -57.88 DEG	
D LAT 2.41 DEG	
D LONG -57.82 DEG	

MISSION/
FRAME NO.
1175
YR, MO, DY
HR, MI, SEC
66CE29
030535.81

TIME
ALT RT
LAT
LONG
66CE29
0:0551
-2.91
-35.62

S/C POSITION
ALT 50.14 KM
TILT ANG 19.78 DEG
TILT AZIM 148.40 DEG
SWING ANG 323.88 DEG
N.DEV. 357.17 DEG

S/C ORIENTATION
ALT 50.14 KM
TILT ANG 19.78 DEG
TILT AZIM 148.40 DEG
SWING ANG 323.88 DEG
N.DEV. 357.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.77 DEG	AB 50.9 KM
A LONG -34.67 DEG	BC 43.9 KM
B LAT -4.44 DEG	CD 42.8 KM
B LONG -34.57 DEG	DA 33.7 KM
C LAT -4.13 DEG	TILT DISTANCE 26.7
C LONG -35.99 DEG	
D LAT -2.74 DEG	
D LONG -35.79 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -3.11 DEG	AB 20.4 KM
A LONG -35.22 DEG	BC 5.2 KM
B LAT -3.78 DEG	CD 19.9 KM
B LONG -35.24 DEG	DA 4.7 KM
C LAT -3.75 DEG	TILT DISTANCE 18.7
C LONG -35.41 DEG	
D LAT -3.10 DEG	
D LONG -35.37 DEG	

PRINCIPAL POINT

POINT	SIDE LENGTH
SUN AZIM 88.63 DEG	AB 27.6 KM
INCID ANG 85.28 DEG	BC 7.4 KM
EMISS ANG 18.43 DEG	CD 28.3 KM
PHASE ANG 70.39 DEG	DA 6.8 KM
ALPHA 14.80 DEG	TILT DISTANCE 93.7

PRINCIPAL POINT

POINT	SIDE LENGTH
SUN AZIM 86.21 DEG	AB 20.4 KM
INCID ANG 59.53 DEG	BC 5.2 KM
EMISS ANG 20.38 DEG	CD 19.9 KM
PHASE ANG 70.41 DEG	DA 4.7 KM
ALPHA -12.32 DEG	TILT DISTANCE 18.7

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

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MISSION/
FRAME NO.

1176 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR-MD-DY 660829 ALT 50°.78 KM TILT ANG. 0°.80 DEG SUN AZIM 86°.44 DEG LATITUDE ~3°.03 DEG
 HR-MI-SEC 063159.01 ALT RT 0°.587 KM/SEC TILT AZIM 148°.62 DEG INCID ANG 59°.49 DEG LONGITUDE ~37°.04 DEG
 LAT -3°.01 DEG SWING ANG 316°.14 DEG EMISS ANG 0°.82 DEG
 LONG -37°.05 DEG N.DEV. 347°.52 DEG PHASE ANG 59°.87 DEG
 ALPHA -C.39 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2°.49 DEG AB 41°.5 KM
 A LONG -36°.32 DEG BC 35°.2 KM
 B LAT -3°.83 DEG CD 41°.3 KM
 B LONG -36°.61 DEG DA 34°.9 KM
 C LAT -3°.58 DEG TILT DISTANCE 1.1
 C LONG -37°.74 DEG
 D LAT -2°.25 DEG
 D LONG -37°.44 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2°.75 DEG AB 18°.3 KM
 A LONG -36°.90 DEG BC .4°.6 KM
 B LAT -3°.35 DEG CD 18°.3 KM
 B LONG -37°.03 DEG DA 4°.6 KM
 C LAT -3°.31 DEG TILT DISTANCE
 C LONG -37°.18 DEG B.4
 D LAT -2°.72 DEG
 D LONG -37°.04 DEG

MISSION/
FRAME NO.

1177 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR-MD-DY 660825 ALT 50°.91 KM TILT ANG 0°.89 DEG SUN AZIM 86°.41 DEG LATITUDE ~3°.06 DEG
 HR-MI-SEC 0632 1.24 ALT RT 0°.0598 KM/SEC TILT AZIM 142°.19 DEG INCID ANG 59°.35 DEG LONGITUDE ~36°.90 DEG
 LAT -3°.04 DEG SWING ANG 309°.72 DEG EMISS ANG 0°.92 DEG
 LONG -36°.91 DEG N.DEV. 347°.53 DEG PHASE ANG 59°.87 DEG
 ALPHA -0°.52 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2°.52 DEG AB 41°.7 KM
 A LONG -36°.18 DEG BC 35°.3 KM
 B LAT -3°.86 DEG CD 41°.4 KM
 B LONG -36°.47 DEG DA 35°.0 KM
 C LAT -3°.61 DEG TILT DISTANCE 1.2
 C LONG -37°.61 DEG
 D LAT -2°.28 DEG
 D LONG -37°.31 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2°.78 DEG AB 18°.3 KM
 A LONG -36°.76 DEG BC 4°.6 KM
 B LAT -3°.37 DEG CD 18°.3 KM
 B LONG -36°.89 DEG DA 4°.6 KM
 C LAT -3°.34 DEG TILT DISTANCE
 C LONG -37°.04 DEG 9.4
 D LAT -2°.75 DEG
 D LONG -36°.91 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

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MISSION/

FRAME NO.

1178

YR-MO-DY

660625

HR-MI-SEC

0632 3.48

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	1.00 DEG	SUN AZIM	86.38 DEG	LATITUDE	-3.09 DEG
51.05	KM	TILT AZIM	137.07 DEG	INCID ANG	59.22 DEG	LONGITUDE	-36.75 DEG
0.0610	KM/SEC	SWING ANG	304.60 DEG	EMIS ANG	1.03 DEG		
-3.07	DEG	N.DEV.	347.54 DEG	PHASE ANG	59.87 DEG		
-36.78	DEG			ALPHA	-0.66 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION		CORNER COORDINATE		SIDE LENGTH	
AB	41.9 KM	CD	1.00 KM	A LAT	-2.81 DEG	AB	1B.4 KM		
BC	35.4 KM	DA	35.1 KM	A LONG	-35.62 DEG	BC	4.6 KM		
CD	41.4 KM	DA	35.1 KM	B LAT	-3.40 DEG	CD	1B.4 KM		
DA	35.33 DEG	TILT DISTANCE	1.4	B LONG	-36.75 DEG	DA	4.6 KM		
DA	35.33 DEG			C LAT	-3.37 DEG	TILT DISTANCE			
DA	35.33 DEG			C LONG	-36.90 DEG	10.6			
DA	35.33 DEG			D LAT	-2.78 DEG				
DA	35.33 DEG			D LONG	-35.77 DEG				

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
AB	1B.4 KM	CD	1.00 KM	SUN AZIM	86.35 DEG	LATITUDE	-3.12 DEG
BC	4.6 KM	DA	35.1 KM	INCID ANG	59.08 DEG	LONGITUDE	-36.42 DEG
CD	1B.4 KM	DA	4.6 KM	EMIS ANG	1.15 DEG		
DA	4.6 KM	TILT DISTANCE		PHASE ANG	59.87 DEG		
DA	4.6 KM			ALPHA	-0.80 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION		CORNER COORDINATE		SIDE LENGTH	
AB	42.0 KM	CD	1.00 KM	A LAT	-2.84 DEG	AB	1B.5 KM		
BC	35.5 KM	DA	35.2 KM	A LONG	-36.48 DEG	BC	4.6 KM		
CD	41.5 KM	DA	35.2 KM	B LAT	-3.43 DEG	CD	1B.4 KM		
DA	35.2 KM	TILT DISTANCE	1.5	B LONG	-36.51 DEG	DA	4.6 KM		
DA	35.2 KM			C LAT	-3.40 DEG	TILT DISTANCE			
DA	35.2 KM			C LONG	-36.76 DEG	11.8			
DA	35.2 KM			D LAT	-2.81 DEG				
DA	35.2 KM			D LONG	-36.63 DEG				

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

1180 YR, MO, DY 6/08/25 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
HR, MI, SEC 0632 7.98 ALT 51° 32' KM TILT ANG 1.24 DEG SUN AZIM 86.32 DEG LATITUDE -3.15 DEG
ALT RT 0.0632 KM/SEC TILT AZIM 129.61 DEG INCID ANG 58.94 DEG LONGITUDE -36.48 DEG
LAT -3.12 DEG SWING ANG 297.15 DEG EMIS ANG 1.27 DEG
LONG -36.51 DEG N.DEV. 347.56 DEG PHASE ANG 59.87 DEG
N.DEV. ALPHA -0.93 DEG

MISSION RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -2° 60' DEG	AB 42.2 KM	A LAT -2° 87' DEG	A LAT -2° 87' DEG	AB 18.5 KM	A LAT -2° 87' DEG
A LONG -35.75 DEG	BC 35.6 KM	B LAT -36° 34' DEG	B LAT -36° 34' DEG	BC 4.7 KM	B LAT -36° 34' DEG
B LAT -3° 56' DEG	CD 41.6 KM	C LAT -36° 47' DEG	C LAT -36° 47' DEG	CD 18.5 KM	C LAT -36° 47' DEG
B LONG -36.05 DEG	DA 35.3 KM	D LAT -36° 62' DEG	D LAT -36° 62' DEG	DA 4.6 KM	D LAT -36° 62' DEG
C LAT -3° 70' DEG	TILT DISTANCE 1.7	C LONG -36° 83' DEG	C LONG -36° 83' DEG	TILT DISTANCE 13.1	D LONG -36° 49' DEG
C LONG -37.19 DEG		D LAT -36° 83' DEG			
C LAT -2° 26' DEG		D LONG -36° 49' DEG			
D LONG -36.89 DEG					

MISSION/
FRAME NO.

1181 YR, MO, DY 6/08/25 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
HR, MI, SEC 063210.24 ALT RT 51.47 KM TILT ANG 1.36 DEG SUN AZIM 86.29 DEG LATITUDE -3.18 DEG
ALT 0.0644 KM/SEC TILT AZIM 126.85 DEG INCID ANG 58.80 DEG LONGITUDE -36.34 DEG
LAT -3.15 DEG SWING ANG 294.40 DEG EMIS ANG 1.40 DEG
LONG -36.38 DEG N.DEV. 347.56 DEG PHASE ANG 59.87 DEG
N.DEV. ALPHA -1.07 DEG

MISSION RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -2° 62' DEG	AB 42.3 KM	A LAT -2° 89' DEG	A LAT -2° 89' DEG	AB 18.6 KM	A LAT -2° 89' DEG
A LONG -35.61 DEG	BC 35.7 KM	B LONG -36° 20' DEG	B LONG -36° 20' DEG	BC 4.7 KM	B LONG -36° 20' DEG
B LAT -3° 99' DEG	CD 41.7 KM	C LAT -36° 49' DEG	C LAT -36° 49' DEG	CD 18.5 KM	C LAT -36° 49' DEG
B LONG -35.50 DEG	DA 35.4 KM	D LAT -36° 33' DEG	D LAT -36° 33' DEG	DA 4.7 KM	D LAT -36° 33' DEG
C LAT -3° 73' DEG	TILT DISTANCE 1.9	C LONG -36° 48' DEG	C LONG -36° 48' DEG	TILT DISTANCE 14.4	D LONG -36° 35' DEG
C LONG -37.05 DEG		D LAT -2° 86' DEG			
D LAT -2° 38' DEG		D LONG -36° 35' DEG			
D LONG -36.75 DEG					

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT		
					SUN AZIM.	TILT ANG.	LATITUDE
118E	66C625	ALT 51.62 KM ALT RT 0.6655 KM/SEC LAT -3.18 DEG LONG -36.24 DEG	1.49 DEG TILT AZIM 124.54 DEG SWING ANG 292.10 DEG N.DEV. 347.57 DEG	56.57 DEG EMISS. ANG 1.53 DEG PHASE ANG 59.87 DEG ALPHA -1.21 DEG	56.26 DEG INCID. ANG 59.53 DEG EMISS. ANG 59.87 DEG PHASE ANG -1.21 DEG	-3.20 DEG -36.26 DEG	-3.20 DEG -36.26 DEG
MEDIUM RESOLUTION							
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE	
A LAT	-2.65 DEG	AB 42.5 KM	A LAT	-2.92 DEG	AB 18.6 KM	A LAT	-2.92 DEG
A LONG	-35.46 DEG	BC 35.8 KM	A LONG	-36.06 DEG	BC 4.7 KM	A LONG	-36.06 DEG
B LAT	-4.02 DEG	CD 41.8 KM	B LAT	-3.52 DEG	CD 18.6 KM	B LAT	-3.52 DEG
B LONG	-35.76 DEG	DA 35.5 KM	B LONG	-36.19 DEG	DA 4.7 KM	B LONG	-36.19 DEG
C LAT	-3.75 DEG	TILT DISTANCE 2.0	C LAT	-3.49 DEG	TILT DISTANCE 15.7	C LAT	-3.49 DEG
C LONG	-36.92 DEG		C LONG	-36.34 DEG		C LONG	-36.34 DEG
D LAT	-2.41 DEG		D LAT	-2.89 DEG		D LAT	-2.89 DEG
D LONG	-36.61 DEG		D LONG	-36.21 DEG		D LONG	-36.21 DEG
HIGH RESOLUTION							
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE	
A LAT	86.23 DEG	SUN AZIM 86.23 DEG	A LAT	1.62 DEG	SUN AZIM 1.62 DEG	A LAT	1.62 DEG
A LONG	58.53 DEG	EMISS. ANG 58.53 DEG	A LONG	56.59 DEG	EMISS. ANG 56.59 DEG	A LONG	56.59 DEG
B LAT	1.66 DEG	PHASE ANG 1.66 DEG	B LAT	-3.55 DEG	PHASE ANG -3.55 DEG	B LAT	-3.55 DEG
B LONG	59.87 DEG	ALPHA 59.87 DEG	B LONG	-36.05 DEG	ALPHA -36.05 DEG	B LONG	-36.05 DEG
C LAT	-1.35 DEG		C LAT	-3.52 DEG		C LAT	-3.52 DEG
C LONG	17.1 DEG		C LONG	-36.20 DEG		C LONG	-36.20 DEG
D LAT	-2.92 DEG		D LAT	-2.92 DEG		D LAT	-2.92 DEG
D LONG	-36.07 DEG		D LONG	-36.07 DEG		D LONG	-36.07 DEG
MEDIUM RESOLUTION							
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE	
A LAT	-2.68 DEG	AB 42.7 KM	A LAT	-2.95 DEG	AB 18.7 KM	A LAT	-2.95 DEG
A LONG	-35.32 DEG	BC 35.9 KM	A LONG	-35.92 DEG	BC 4.7 KM	A LONG	-35.92 DEG
B LAT	-4.05 DEG	CD 41.9 KM	B LAT	-3.55 DEG	CD 18.6 KM	B LAT	-3.55 DEG
B LONG	-35.62 DEG	DA 35.6 KM	B LONG	-36.05 DEG	DA 4.7 KM	B LONG	-36.05 DEG
C LAT	-3.78 DEG	TILT DISTANCE 2.2	C LAT	-3.52 DEG	TILT DISTANCE 17.1	C LAT	-3.52 DEG
C LONG	-36.78 DEG		C LONG	-36.20 DEG		C LONG	-36.20 DEG
D LAT	-2.44 DEG		D LAT	-2.92 DEG		D LAT	-2.92 DEG
D LONG	-36.47 DEG		D LONG	-36.07 DEG		D LONG	-36.07 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/19/71

MISSION/

FRAME NO.

1184
 YR-MO-DY 660625
 HR-MI-SEC 095643.73

S/C POSITION
 ALT 48.75 KM
 ALT RT 0.0123 KM/SEC
 LAT -1.91 DEG
 LONG -44.38 DEG

MISSION/

FRAME NO.

1185
 YR-MO-DY 660625
 HR-MI-SEC 095645.82

S/C POSITION
 ALT 48.78 KM
 ALT RT 0.0133 KM/SEC
 LAT -1.93 DEG
 LONG -44.25 DEG

S/C ORIENTATION

TILT ANG 0.98 DEG
 TILT AZIM 330.05 CEG
 SWING ANG 108.74 DEG
 N.DEV. 347.98 DEG

PHOTO ILLUMINATION

SUN AZIM 87.44 DEG
 INCID ANG 65.05 DEG
 EMISS ANG 1.21 DEG
 PHASE ANG 64.20 DEG
 ALPHA 0.94 DEG

PRINCIPAL POINT

LATITUDE -1.89 DEG
 LONGITUDE -44.40 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -1.37 DEG AB 39.5 KM
 A LONG -43.72 DEG BC 33.5 KM
 B LAT -2.65 DEG CD 40.3 KM
 B LONG -43.59 DEG DA 33.7 KM
 C LAT -2.42 DEG TILT DISTANCE 1.3
 C LONG -45.09 DEG
 D LAT -1.13 DEG
 D LONG -44.60 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT -1.62 DEG AB 17.5 KM
 A LONG -44.27 DEG BC 4.4 KM
 B LAT -2.19 DEG CD 17.6 KM
 B LONG -44.39 DEG DA 4.4 KM
 C LAT -2.16 DEG TILT DISTANCE 10.3
 C LONG -44.53 DEG
 D LAT -1.59 DEG
 D LONG -44.41 DEG

PHOTO ILLUMINATION
 SUN AZIM 87.42 DEG
 INCID ANG 64.92 DEG
 EMISS ANG 0.88 DEG
 PHASE ANG 64.20 DEG
 ALPHA 0.72 DEG

PRINCIPAL POINT

LATITUDE -1.92 DEG
 LONGITUDE -44.27 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -1.65 DEG AB 17.5 KM
 A LONG -44.14 DEG BC 4.4 KM
 B LAT -2.22 DEG CD 17.6 KM
 B LONG -44.26 DEG DA 4.4 KM
 C LAT -2.19 DEG TILT DISTANCE 9.1
 C LONG -44.40 DEG
 D LAT -1.62 DEG
 D LONG -44.28 DEG

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MISSION /

FRAME NO.

YR, MO, DY

HR, MIN, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1186	660629	ALT 48.81 KM ALT RT 0.0144 KM/SEC	TILT ANG 0.74 DEG TILT AZIM 306.33 DEG SWING ANG 114.32 DEG N.DEV. 347.99 DEG	SUN AZIM 87.40 DEG INCID ANG 64.79 DEG EMISS ANG 0.76 DEG PHASE ANG 64.20 DEG ALPHA 0.59 DEG	LATITUDE -1.95 DEG LONGITUDE -44.14 DEG
	055647.91	LAT -1.96 DEG LONG -44.13 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -1.42 DEG	AB 39.6 KM	CORNER COORDINATE SIDE LENGTH
A LONG -43.46 DEG	BC 33.6 KM	A LAT -1.68 DEG AB 17.6 KM
B LAT -2.70 DEG	CD 40.0 KM	A LONG -44.01 DEG BC 4.4 KM
B LONG -43.73 DEG	DA 33.8 KM	B LAT -2.25 DEG CD 17.6 KM
C LAT -2.48 DEG	TIILT DISTANCE 1.0	B LONG -44.13 DEG DA 4.4 KM
C LONG -44.82 DEG		C LAT -2.22 DEG TILT DISTANCE 7.8
D LAT -1.18 DEG		C LONG -44.27 DEG
D LONG -44.55 DEG		D LAT -1.65 DEG

MISSION /

FRAME NO.

YR, MO, DY

HR, MIN, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1187	660629	ALT 48.84 KM ALT RT 0.0155 KM/SEC	TILT ANG 0.62 DEG TILT AZIM 311.24 DEG SWING ANG 119.23 DEG N.DEV. 348.00 DEG	SUN AZIM 87.38 DEG INCID ANG 64.66 DEG EMISS ANG 0.64 DEG PHASE ANG 64.20 DEG ALPHA 0.46 DEG	LATITUDE -1.97 DEG LONGITUDE -44.01 DEG
	095650.00	LAT -1.99 DEG LONG -44.00 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -1.45 DEG	AB 39.7 KM	CORNER COORDINATE SIDE LENGTH
A LONG -43.33 DEG	BC 33.6 KM	A LAT -1.70 DEG AB 17.6 KM
B LAT -2.73 DEG	CD 40.0 KM	A LONG -43.88 DEG BC 4.4 KM
B LONG -43.60 DEG	DA 33.8 KM	B LAT -2.27 DEG CD 17.6 KM
C LAT -2.50 DEG	TIILT DISTANCE 0.8	B LONG -44.00 DEG DA 4.4 KM
C LONG -44.69 DEG		C LAT -2.24 DEG TILT DISTANCE 6.6
D LAT -1.21 DEG		C LONG -44.15 DEG
D LONG -44.42 DEG		D LAT -1.67 DEG

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MISSION/
FRAME NO.

1188 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR • MO • DY 660629 ALT 48.88 KM TILT ANG 0.52 DEG SUN AZIM 87.36 DEG LATITUDE -2.00 DEG
 HR • MI • SEC 055452.10 ALT RT 0.0165 KM/SEC TILT AZIM 318.31 DEG INCID ANG 64.53 DEG LONGITUDE -43.88 DEG
 LAT -2.01 DEG SWING ANG 126.31 DEG EMISS ANG 0.53 DEG
 LONG -43.87 DEG NDEV. 348.00 DEG PHASE ANG 64.20 DEG
 " " " ALPHA 0.33 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1.47 DEG AB 39.8 KM
 A LONG -43.19 DEG BC 33.7 KM
 B LAT -2.76 DEG CD 40.0 KM
 B LONG -43.47 DEG DA 33.8 KM
 C LAT -2.53 DEG TILT DISTANCE 0.7
 C LONG -44.56 DEG
 D LAT -1.24 DEG
 D LONG -44.29 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1.73 DEG AB 17.6 KM
 A LONG -43.75 DEG BC 4.4 KM
 B LAT -2.30 DEG CD 17.6 KM
 B LONG -43.87 DEG DA 4.4 KM
 C LAT -2.27 DEG
 C LONG -44.02 DEG
 D LAT -1.70 DEG
 D LONG -43.90 DEG

MISSION/
FRAME NO.

1189 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR • MO • DY 660629 ALT 48.91 KM TILT ANG 0.42 DEG SUN AZIM 87.34 DEG LATITUDE -2.03 DEG
 HR • MI • SEC 095554.20 ALT RT 0.0176 KM/SEC TILT AZIM 328.87 DEG INCID ANG 64.41 DEG LONGITUDE -43.75 DEG
 LAT -2.04 DEG SWING ANG 136.88 DEG EMISS ANG 0.43 DEG
 LONG -43.75 DEG NDEV. 348.01 DEG PHASE ANG 64.20 DEG
 " " " ALPHA 0.20 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1.50 DEG AB 39.8 KM.
 A LONG -43.06 DEG BC 33.7 KM
 B LAT -2.79 DEG CD 40.0 KM
 B LONG -43.34 DEG DA 33.8 KM
 C LAT -2.56 DEG TILT DISTANCE 0.5
 C LONG -44.13 DEG
 D LAT -1.27 DEG
 D LONG -44.16 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1.76 DEG AB 17.6 KM
 A LONG -43.62 DEG BC 4.4 KM
 B LAT -2.33 DEG CD 17.6 KM
 B LONG -43.74 DEG DA 4.4 KM
 C LAT -2.30 DEG
 C LONG -43.89 DEG
 D LAT -1.73 DEG
 D LONG -43.77 DEG

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MISSION/

FRAME NO.

1190

YR.MD.DY

660829

HR.MI.SEC

055656.30

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 48.95 KM ALT RT 0.0187 KM/SEC	TIILT ANG 0.34 DEG TIILT AZIM 344.78 DEG SWING ANG 152.79 DEG N.DEV. 348.01 DEG.	SUN AZIM 87.32 DEG INCID ANG 64.28 DEG EMISS ANG 0.35 DEG PHASE ANG 64.20 DEG ALPHA. 0.08 DEG	LATITUDE -2.05 DEG LONGITUDE -43.63 DEG

MISSION/

FRAME NO.

1191

YR.MD.DY

660829

HR.MI.SEC

055658.40

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -1.53 DEG A LONG -42.93 DEG B LAT -2.81 DEG B LONG -43.21 DEG C LAT -2.58 DEG C LONG -44.30 DEG D LAT -1.29 DEG D LONG -44.03 DEG	AB 39.9 KM BC 33.7 KM CD 40.0 KM DA 33.9 KM TIILT DISTANCE 0.4	S/C POSITION ALT 48.99 KM ALT RT 0.0198 KM/SEC LA 1 -2.09 DEG LONG -43.50 DEG	A LAT -1.78 DEG A LONG -43.49 DEG B LAT -2.35 DEG B LONG -43.61 DEG C LAT -2.32 DEG C LONG -43.76 DEG D LAT -1.75 DEG D LONG -43.64 DEG	PHOTO ILLUMINATION SUN AZIM 87.30 DEG INCID ANG 64.15 DEG EMISS ANG 0.32 DEG PHASE ANG 64.20 DEG ALPHA -0.05 DEG	PRINCIPAL POINT LATITUDE -2.08 DEG LONGITUDE -43.50 DEG

MISSION/

FRAME NO.

1191

YR.MD.DY

660829

HR.MI.SEC

055658.40

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -1.55 DEG A LONG -42.80 DEG B LAT -2.84 DEG B LONG -43.08 DEG C LAT -2.61 DEG C LONG -44.17 DEG D LAT -1.32 DEG D LONG -43.90 DEG	AB 40.0 KM BC 33.7 KM CD 40.0 KM DA 33.9 KM TIILT DISTANCE 0.4	S/C POSITION ALT 48.99 KM ALT RT 0.0198 KM/SEC LA 1 -2.09 DEG LONG -43.50 DEG	A LAT -1.81 DEG A LONG -43.36 DEG B LAT -2.38 DEG B LONG -43.48 DEG C LAT -2.35 DEG C LONG -43.63 DEG D LAT -1.78 DEG D LONG -43.51 DEG	PHOTO ILLUMINATION SUN AZIM 87.30 DEG INCID ANG 64.15 DEG EMISS ANG 0.32 DEG PHASE ANG 64.20 DEG ALPHA -0.05 DEG	PRINCIPAL POINT LATITUDE -2.08 DEG LONGITUDE -43.50 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 49.03 KM 0.0208 KM/SEC LAT -2.12 DEG LONG -43.37 DEG	TIILT ANG 0.32 DEG TILT AZIM 29.98 DEG SWING ANG 198.00 DEG N.DEV. 348.02 DEG	SUN AZIM 37.27 DEG INCID ANG 64.02 DEG EMISS ANG 0.33 DEG PHASE ANG 64.20 DEG ALPHA -0.16 DEG	LATITUDE -2.11 DEG LONGITUDE -43.37 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -1.58 DEG A LONG -42.67 DEG B LAT -2.87 DEG B LONG -42.55 DEG C LAT -2.64 DEG C LONG -44.04 DEG D LAT -1.35 DEG D LONG -43.77 DEG	AB 40.0 KM BC 33.8 KM CD 40.0 KM DA 33.9 KM TILT DISTANCE 0.4 CLONG -43.50 DEG DLAT -1.81 DEG DLONG -43.38 DEG	CORNER COORDINATE SIDE LENGTH A LAT -1.84 DEG AB 17.7 KM A LONG -43.23 DEG BC 4.4 KM B LAT -2.41 DEG CD 17.7 KM B LONG -43.35 DEG DA 4.4 KM C LAT -2.38 DEG TILT DISTANCE 3.4 CLONG -43.20 DEG DLAT -1.81 DEG DLONG -43.38 DEG

MISSION/

FRAME NO.

TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 49.08 KM 0.0219 KM/SEC LAT -2.14 DEG LONG -43.24 DEG	TIILT ANG 0.36 DEG TILT AZIM 48.61 DEG SWING ANG 216.64 DEG N.DEV. 348.03 DEG	SUN AZIM 87.25 DEG INCID ANG 63.89 DEG EMISS ANG 0.40 DEG PHASE ANG 64.20 DEG ALPHA -0.31 DEG	LATITUDE -2.14 DEG LONGITUDE -43.24 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -1.60 DEG A LONG -42.54 DEG B LAT -2.90 DEG B LONG -42.82 DEG C LAT -2.66 DEG C LONG -43.91 DEG D LAT -1.37 DEG D LONG -43.64 DEG	AB 40.1 KM BC 33.8 KM CD 40.0 KM DA 33.9 KM TILT DISTANCE 0.5 CLONG -43.37 DEG DLAT -1.83 DEG DLONG -43.25 DEG	CORNER COORDINATE SIDE LENGTH A LAT -1.86 DEG AB 17.7 KM A LONG -43.10 DEG BC 4.4 KM B LAT -2.44 DEG CD 17.7 KM B LONG -43.22 DEG DA 4.4 KM C LAT -2.40 DEG TILT DISTANCE 4.0 CLONG -43.37 DEG DLAT -1.83 DEG DLONG -43.25 DEG

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MISSION/

FRAME NO.

1194

TIME

660829

YR.MD.DY

0957 4-72

HR.MI.SEC

0.0230

KM/SEC

ALT RT

61.22

DEG

LAT

-2.17

DEG

LONG

-43.12

DEG

N.DEV.

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT RT

69.57

DEG

LAT

-2.19

DEG

LONG

-42.99

DEG

N.DEV.

MISSION/

FRAME NO.

1194

TIME

660829

YR.MD.DY

0957 4-72

HR.MI.SEC

0.0230

KM/SEC

ALT

49.18

DEG

TILT

0.47

DEG

AZIM

87.23

DEG

INCID ANG

63.76

DEG

EMISS ANG

0.49

DEG

PHASE ANG

64.20

DEG

ALPHA

-0.44

DEG

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT RT

69.57

DEG

LAT

-2.19

DEG

LONG

-42.99

DEG

N.DEV.

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT

49.18

DEG

TILT

0.58

DEG

AZIM

63.63

DEG

INCID ANG

63.63

DEG

EMISS ANG

0.60

DEG

PHASE ANG

64.20

DEG

ALPHA

-0.57

DEG

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT RT

69.57

DEG

LAT

-2.19

DEG

LONG

-42.99

DEG

N.DEV.

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT

49.18

DEG

TILT

0.58

DEG

AZIM

63.63

DEG

INCID ANG

63.63

DEG

EMISS ANG

0.60

DEG

PHASE ANG

64.20

DEG

ALPHA

-0.57

DEG

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT RT

69.57

DEG

LAT

-2.19

DEG

LONG

-42.99

DEG

N.DEV.

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT

49.18

DEG

TILT

0.58

DEG

AZIM

63.63

DEG

INCID ANG

63.63

DEG

EMISS ANG

0.60

DEG

PHASE ANG

64.20

DEG

ALPHA

-0.57

DEG

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT RT

69.57

DEG

LAT

-2.19

DEG

LONG

-42.99

DEG

N.DEV.

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT

49.18

DEG

TILT

0.58

DEG

AZIM

63.63

DEG

INCID ANG

63.63

DEG

EMISS ANG

0.60

DEG

PHASE ANG

64.20

DEG

ALPHA

-0.57

DEG

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT

49.18

DEG

TILT

0.58

DEG

AZIM

63.63

DEG

INCID ANG

63.63

DEG

EMISS ANG

0.60

DEG

PHASE ANG

64.20

DEG

ALPHA

-0.57

DEG

MISSION/

FRAME NO.

1195

TIME

660829

YR.MD.DY

0957 6-83

HR.MI.SEC

0.0241

KM/SEC

ALT

49.18

DEG

TILT

0.58

DEG

AZIM

63.63

DEG

INCID ANG

63.63

DEG

EMISS ANG

0.60

DEG

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MISSION /

FRAME NO.

1196

TIME

660629

S/C POSITION

ALT 49.23 KM

S/C ORIENTATION

TILT ANG 0.69 DEG

PHOTO ILLUMINATION

SUN AZIM 87.19 DEG

PRINCIPAL POINT

LATITUDE -2.22 DEG

MISSION NO.

1196

YR, MO, DY

0957 8.94

HR, MI, SEC

0.0251 SEC

LAT -2.22 DEG

LONG -42.86 DEG

N.DEV.

SWING ANG 243.31 DEG

N.DEV.

PHASE ANG 348.04 DEG

N.DEV.

EMISS ANG 0.71 DEG

N.DEV.

ALPHA -0.70 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

04/10/71

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MISSION /	FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1196	1196	660629	ALT 49.23 KM ALT RT 0.0251 SEC LAT -2.22 DEG LONG -42.86 DEG	TILT ANG 0.69 DEG TILT AZIM 75.27 DEG SWING ANG 243.31 DEG N.DEV.	SUN AZIM 87.19 DEG INCID ANG 63.51 DEG EMISS ANG 0.71 DEG PHASE ANG 64.20 DEG ALPHA -0.70 DEG	LATITUDE -2.22 DEG LONGITUDE -42.85 DEG

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

0.0262 SEC

LAT -2.25 DEG

LONG -42.74 DEG

N.DEV.

SWING ANG 247.39 DEG

N.DEV.

PHASE ANG 348.05 DEG

N.DEV.

ALPHA -0.83 DEG

N.DEV.

MISSION /

1197

TIME

660829

S/C POSITION

ALT 49.28 KM

S/C ORIENTATION

TILT ANG 0.81 DEG

PHOTO ILLUMINATION

SUN AZIM 87.17 DEG

PRINCIPAL POINT

LATITUDE -2.24 DEG

MISSION NO.

1197

YR, MO, DY

095711.05

HR, MI, SEC

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MISSION/

FRAME NO.

1198

YR, MO, DY

660825

TIME

S/C POSITION

ALT

.49°.34

KM

TILT ANG

0.93

DEG

INCID ANG

87.15

DEG

LATITUDE

-2.27

DEG

LONGITUDE

-42.58

DEG

HR, MIN, SEC

055713.17

ALT RT

0.0273

KM/SEC

TILT AZIM

82.38

DEG

EMISS ANG

0.96

DEG

PHASE ANG

64.20

DEG

N.DEV.

348.05

DEG

ALPHA

-0.95

DEG

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	-1.73 DEG	AB 4.0.5 KM
A LONG	-41.88 DEG	BC 34.0 KM
B LAT	-3.04 DEG	CD 4.0.0 KM
B LONG	-42.16 DEG	DA 34.1 KM
C LAT	-0.80 DEG	TILT DISTANCE 1.3
C LONG	-43.26 DEG	
D LAT	-1.51 DEG	
D LONG	-42.58 DEG	

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	-1.73 DEG	AB 17.8 KM
A LONG	-42.45 DEG	BC 4.5 KM
B LAT	-2.57 DEG	CD 17.8 KM
B LONG	-42.57 DEG	DA 4.5 KM
C LAT	-2.54 DEG	TILT DISTANCE 9.8
C LONG	-42.72 DEG	
D LAT	-1.97 DEG	
D LONG	-42.60 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	-2.00 DEG	AB 17.8 KM
A LONG	87.12 DEG	BC 4.5 KM
B LAT	63.12 DEG	CD 17.8 KM
B LONG	64.20 DEG	DA 4.5 KM
C LAT	1.39 DEG	TILT DISTANCE 11.2
C LONG	-1.08 DEG	
D LAT	-1.99 DEG	
D LONG	-42.46 DEG	

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	-2.02 DEG	AB 17.8 KM
A LONG	-42.32 DEG	BC 4.5 KM
B LAT	-2.60 DEG	CD 17.8 KM
B LONG	-42.64 DEG	DA 4.5 KM
C LAT	-2.57 DEG	TILT DISTANCE 11.2
C LONG	-42.59 DEG	
D LAT	-1.99 DEG	
D LONG	-42.46 DEG	

MISSION/

FRAME NO.

1199

YR, MO, DY

660825

TIME

S/C POSITION

ALT

49.40

KM

TILT ANG

1.06

DEG

INCID ANG

87.12

DEG

LATITUDE

-2.30

DEG

LONGITUDE

-42.45

DEG

HR, MIN, SEC

095715.29

ALT RT

0.0284

KM/SEC

TILT AZIM

84.70

DEG

EMISS ANG

1.76

DEG

PHASE ANG

64.20

DEG

N.DEV.

348.06

DEG

ALPHA

-1.08

DEG

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	-2.76 DEG	AB 4.0.6 KM
A LONG	-41.75 DEG	BC 34.0 KM
B LAT	-3.07 DEG	CD 4.0.0 KM
B LONG	-42.03 DEG	DA 34.2 KM
C LAT	-2.83 DEG	TILT DISTANCE 1.4
C LONG	-43.12 DEG	
D LAT	-1.53 DEG	
D LONG	-42.65 DEG	

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	-2.02 DEG	AB 17.8 KM
A LONG	-42.32 DEG	BC 4.5 KM
B LAT	-2.60 DEG	CD 17.8 KM
B LONG	-42.64 DEG	DA 4.5 KM
C LAT	-2.57 DEG	TILT DISTANCE 11.2
C LONG	-42.59 DEG	
D LAT	-1.99 DEG	
D LONG	-42.46 DEG	

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MISSION/

FRAME NO.

TIME

S/C POSITION
ALT 49.58 KM
ALT RT 0.0279 KM/SEC
LAT -2.31 DEG
LONG -44.39 DEGS/C ORIENTATION
TILT ANG 0.51 DEG
TILT AZIM 313.98 DEG
SWING ANG 121.90 DEG
N.DEV. 347.92 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.77 DEG AB 40.3 KM
A LONG -43.70 DEG BC 34.1 KM
B LAT -3.07 DEG CD 40.5 KM
B LONG -43.98 DEG DA 34.3 KM
C LAT -2.84 DEG TILT DISTANCE 0.7
C LONG -45.09 DEG
D LAT -1.53 DEG D LAT -2.00 DEG
D LONG -44.81 DEG D LONG -44.41 DEGPHOTO ILLUMINATION
SUN AZIM 87.14 DEG
INCID ANG 63.32 DEG
EMISS ANG 0.52 DEG
PHASE ANG 62.96 DEG
ALPHA 0.35 DEGPRINCIPAL POINT
LATITUDE -2.30 DEG
LONGITUDE -44.40 DEGCORNER COORDINATE SIDE LENGTH
A LAT -2.03 DEG AB 17.8 KM
A LONG -44.27 DEG BC 4.5 KM
B LAT -2.60 DEG CD 17.9 KM
B LONG -44.39 DEG DA 4.5 KM
C LAT -2.57 DEG TILT DISTANCE 5.3
C LONG -44.53 DEG
D LAT -2.00 DEG
D LONG -44.41 DEGPHOTO ILLUMINATION
SUN AZIM 87.11 DEG
INCID ANG 63.19 DEG
EMISS ANG 0.41 DEG
PHASE ANG 62.96 DEG
ALPHA 0.22 DEGPRINCIPAL POINT
LATITUDE -2.33 DEG
LONGITUDE -44.27 DEGCORNER COORDINATE SIDE LENGTH
A LAT -2.05 DEG AB 17.9 KM
A LONG -44.13 DEG BC 4.5 KM
B LAT -2.63 DEG CD 17.9 KM
B LONG -44.26 DEG DA 4.5 KM
C LAT -2.60 DEG TILT DISTANCE 4.2
C LONG -44.40 DEG
D LAT -2.02 DEG
D LONG -44.28 DEGPHOTO ILLUMINATION
SUN AZIM 87.11 DEG
INCID ANG 63.19 DEG
EMISS ANG 0.41 DEG
PHASE ANG 62.96 DEG
ALPHA 0.22 DEGPRINCIPAL POINT
LATITUDE -2.33 DEG
LONGITUDE -44.27 DEGCORNER COORDINATE SIDE LENGTH
A LAT -2.05 DEG AB 17.9 KM
A LONG -44.13 DEG BC 4.5 KM
B LAT -2.63 DEG CD 17.9 KM
B LONG -44.26 DEG DA 4.5 KM
C LAT -2.60 DEG TILT DISTANCE 4.2
C LONG -44.40 DEG
D LAT -2.02 DEG
D LONG -44.28 DEGPHOTO ILLUMINATION
SUN AZIM 87.11 DEG
INCID ANG 63.19 DEG
EMISS ANG 0.41 DEG
PHASE ANG 62.96 DEG
ALPHA 0.22 DEGPRINCIPAL POINT
LATITUDE -2.33 DEG
LONGITUDE -44.27 DEG

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MISSION /

FRAME NO.

YR, MO, DY

HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
12C2	660625	ALT RT 0.0301 KM/SEC	TILT ANG 0.32 DEG	SUN AZIM 87.09 DEG	LATITUDE -2.34 DEG
	132234.64	LAT -2.36 DEG	TILT AZIM 340.41 DEG	INCID ANG 63.36 DEG	LONGITUDE -44.14 DEG
		LONG -44.13 DEG	SWING ANG 148.34 DEG	EMISS ANG 0.33 DEG	
			N.DEV. 347.93 DEG	PHASE ANG 52.96 DEG	
				ALPHA 0.29 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH				
A LAT -1.82 DEG	AB 40.5 KM	TILT ANG 0.32 DEG	SUN AZIM 87.09 DEG	LATITUDE -2.34 DEG	
A LONG -43.43 DEG	BC 3.2 KM	TILT AZIM 340.41 DEG	INCID ANG 63.36 DEG	LONGITUDE -44.14 DEG	
B LAT -3.13 DEG	CD 43.6 KM	SWING ANG 148.34 DEG	EMISS ANG 0.33 DEG		
B LONG -43.72 DEG	DA 34.4 KM	N.DEV. 347.93 DEG	PHASE ANG 52.96 DEG		
C LAT -2.89 DEG			ALPHA 0.29 DEG		
C LONG -44.22 DEG					
D LAT -1.58 DEG					
D LONG -44.54 DEG					

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH				
A LAT	AB 17.9 KM	TILT ANG 0.08 DEG	SUN AZIM 87.09 DEG	LATITUDE -2.34 DEG	
A LONG	BC 4.5 KM	TILT AZIM 340.00 DEG	INCID ANG 63.45 DEG	LONGITUDE -44.05 DEG	
B LAT	CD 17.9 KM	SWING ANG 148.34 DEG	EMISS ANG 0.33 DEG		
B LONG	DA 4.5 KM	N.DEV. 347.93 DEG	PHASE ANG 52.96 DEG		
C LAT			ALPHA 0.29 DEG		
C LONG					
D LAT					
D LONG					

MISSION /

FRAME NO.

YR, MO, DY

HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
12C2	66CE25	ALT 0.2312 KM/SEC	TILT ANG 0.27 DEG	SUN AZIM 87.07 DEG	LATITUDE -2.38 DEG
	132235.79	LAT -2.39 DEG	TILT AZIM 4.87 DEG	INCID ANG 62.93 DEG	LONGITUDE -44.02 DEG
		LONG -44.00 DEG	SWING ANG 172.80 DEG	EMISS ANG 0.28 DEG	
			N.DEV. 347.94 DEG	PHASE ANG 52.96 DEG	
				ALPHA 0.24 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH				
A LAT -1.25 DEG	AB 4.6 KM	TILT ANG 0.27 DEG	SUN AZIM 87.07 DEG	LATITUDE -2.38 DEG	
A LONG -43.30 DEG	BC 3.3 KM	TILT AZIM 4.87 DEG	INCID ANG 62.93 DEG	LONGITUDE -44.02 DEG	
B LAT -3.16 DEG	CD 4.5 KM	SWING ANG 172.80 DEG	EMISS ANG 0.28 DEG		
B LONG -43.58 DEG	DA 3.4 KM	N.DEV. 347.94 DEG	PHASE ANG 52.96 DEG		
C LAT -2.52 DEG			ALPHA 0.24 DEG		
C LONG -44.69 DEG					
D LAT -1.61 DEG					
D LONG -44.41 DEG					

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH				
A LAT	AB 17.9 KM	TILT ANG 0.11 DEG	SUN AZIM 87.07 DEG	LATITUDE -2.38 DEG	
A LONG	BC 4.5 KM	TILT AZIM 4.87 DEG	INCID ANG 62.93 DEG	LONGITUDE -44.02 DEG	
B LAT	CD 17.9 KM	SWING ANG 172.80 DEG	EMISS ANG 0.28 DEG		
B LONG	DA 4.5 KM	N.DEV. 347.94 DEG	PHASE ANG 52.96 DEG		
C LAT			ALPHA 0.24 DEG		
C LONG					
D LAT					
D LONG					

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MISSION/

FRAME NO.

1204 TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT
ALT PT
LAT
LONGS/C ORIENTATION
TILT ANG
TILT AZIM
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
PHASE ANG
ALPHAPRINCIPAL POINT
LATITUDE
LONGITUDE

MISSION/

FRAME NO.

1205 TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
TILT AZIM
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
PHASE ANG
ALPHAPRINCIPAL POINT
LATITUDE
LONGITUDE

MISSION/

MISSION/

FRAME NO.

1205 TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
TILT AZIM
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
PHASE ANG
ALPHAPRINCIPAL POINT
LATITUDE
LONGITUDE

MISSION/

MISSION/

FRAME NO.

1205 TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
TILT AZIM
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
PHASE ANG
ALPHAPRINCIPAL POINT
LATITUDE
LONGITUDE

MISSION/

MISSION/

FRAME NO.

1205 TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
TILT AZIM
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
PHASE ANG
ALPHAPRINCIPAL POINT
LATITUDE
LONGITUDE

MISSION/

MISSION/

FRAME NO.

1205 TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
TILT AZIM
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
PHASE ANG
ALPHAPRINCIPAL POINT
LATITUDE
LONGITUDE

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MISSION/
FRAME NO.

1206
TIME 6:46:25
YR, MO, DY 1970, 04
HR, MI, SEC 122:243.24

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 49.98 KM	ALT AZIM 0.45 DEG	SUN AZIM 87.06 DEG	LATITUDE -2.46 DEG
ALT RT 1.0345 KM/SEC	TILT AZIM 54.97 DEG	INCID ANG 62.53 DEG	LONGITUDE -43.67 DEG
LAT -2.47 DEG	SWING ANG 232.92 DEG	EMISS ANG 0.47 DEG	
LONG -45.62 DEG	N.DEV. 347.95 DEG	PHASE ANG 52.96 DEG	
	ALPHA -0.43 DEG		

MISSION/
FRAME NO.

1207
TIME 6:46:29
YR, MO, DY 1970, 04
HR, MI, SEC 122:245.75

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50.05 KM	ALT ANG 0.56 DEG	SUN AZIM 86.97 DEG	LATITUDE -2.49 DEG
ALT RT 0.0355 KM/SEC	TILT AZIM 72.98 DEG	INCID ANG 62.49 DEG	LONGITUDE -43.47 DEG
LAT -2.50 DEG	SWING ANG 240.94 DEG	EMISS ANG 0.58 DEG	
LONG -43.49 DFG	N.DEV. 347.96 DEG	PHASE ANG 62.96 DEG	
	ALPHA -0.56 DEG		

MISSION/
FRAME NO.

1208
TIME 6:46:31
YR, MO, DY 1970, 04
HR, MI, SEC 122:247.24

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 49.98 KM	ALT AZIM 0.45 DEG	SUN AZIM 87.06 DEG	LATITUDE -2.46 DEG
ALT RT 1.0345 KM/SEC	TILT AZIM 54.97 DEG	INCID ANG 62.53 DEG	LONGITUDE -43.67 DEG
LAT -2.47 DEG	SWING ANG 232.92 DEG	EMISS ANG 0.47 DEG	
LONG -45.62 DEG	N.DEV. 347.95 DEG	PHASE ANG 52.96 DEG	
	ALPHA -0.43 DEG		

MISSION/
FRAME NO.

1209
TIME 6:46:33
YR, MO, DY 1970, 04
HR, MI, SEC 122:248.75

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50.05 KM	ALT ANG 0.56 DEG	SUN AZIM 86.97 DEG	LATITUDE -2.49 DEG
ALT RT 0.0355 KM/SEC	TILT AZIM 72.98 DEG	INCID ANG 62.49 DEG	LONGITUDE -43.47 DEG
LAT -2.50 DEG	SWING ANG 240.94 DEG	EMISS ANG 0.58 DEG	
LONG -43.49 DFG	N.DEV. 347.96 DEG	PHASE ANG 62.96 DEG	
	ALPHA -0.56 DEG		

MISSION/
FRAME NO.

1207
TIME 6:46:29
YR, MO, DY 1970, 04
HR, MI, SEC 122:245.75

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50.05 KM	ALT ANG 0.56 DEG	SUN AZIM 86.97 DEG	LATITUDE -2.49 DEG
ALT RT 0.0355 KM/SEC	TILT AZIM 72.98 DEG	INCID ANG 62.49 DEG	LONGITUDE -43.47 DEG
LAT -2.50 DEG	SWING ANG 240.94 DEG	EMISS ANG 0.58 DEG	
LONG -43.49 DFG	N.DEV. 347.96 DEG	PHASE ANG 62.96 DEG	
	ALPHA -0.56 DEG		

MISSION/
FRAME NO.

1208
TIME 6:46:31
YR, MO, DY 1970, 04
HR, MI, SEC 122:247.24

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 49.98 KM	ALT AZIM 0.45 DEG	SUN AZIM 87.06 DEG	LATITUDE -2.46 DEG
ALT RT 1.0345 KM/SEC	TILT AZIM 54.97 DEG	INCID ANG 62.53 DEG	LONGITUDE -43.67 DEG
LAT -2.47 DEG	SWING ANG 232.92 DEG	EMISS ANG 0.47 DEG	
LONG -45.62 DEG	N.DEV. 347.95 DEG	PHASE ANG 52.96 DEG	
	ALPHA -0.43 DEG		

MISSION/
FRAME NO.

1209
TIME 6:46:33
YR, MO, DY 1970, 04
HR, MI, SEC 122:248.75

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50.05 KM	ALT ANG 0.56 DEG	SUN AZIM 86.97 DEG	LATITUDE -2.49 DEG
ALT RT 0.0355 KM/SEC	TILT AZIM 72.98 DEG	INCID ANG 62.49 DEG	LONGITUDE -43.47 DEG
LAT -2.50 DEG	SWING ANG 240.94 DEG	EMISS ANG 0.58 DEG	
LONG -43.49 DFG	N.DEV. 347.96 DEG	PHASE ANG 62.96 DEG	
	ALPHA -0.56 DEG		

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MISSION/
FRAME NO.

1208 TIME 66C2S S/C POSITION ALT 50.13 KM TILT ANG 0.68 DEG
 YR. MO. DY HR. MI. SEC 132347.55 ALT RT 0.1367 KM/SEC TILT AZIM 78.30 DEG
 LAT -2.52 DEG SWING ANG 245.26 DEG INCID ANG 62.27 DEG
 LONG -43.36 DEG N.DEV. 347.96 DEG EMISS ANG 0.70 DEG
 PHASE ANG 63.96 DEG TILT DISTANCE 7.2
 ALPHA -0.79 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -1.98 DEG AB 41.1 KM
 A LONG -42.63 DEG BC 34.5 KM
 B LAT -3.70 DEG CD 4.67 KM
 B LONG -42.51 DEG DA 34.7 KM
 C LAT -3.56 DEG TILT DISTANCE 0.9
 C LONG -44.03 DEG D-LAT -1.74 DEG
 D LAT -43.75 DEG D LONG -43.75 DEG

S/C ORIENTATION
 ALT 50.13 KM TILT ANG 0.68 DEG
 ALT RT 0.1367 KM/SEC TILT AZIM 78.30 DEG
 LAT -2.52 DEG SWING ANG 245.26 DEG
 LONG -43.36 DEG N.DEV. 347.96 DEG
 PHASE ANG 63.96 DEG
 ALPHA -0.79 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2.24 DEG AB 18.1 KM
 A LONG -43.20 DEG BC 4.5 KM
 B LAT -2.83 DEG CD 18.9 KM
 B LONG -43.33 DEG DA 4.5 KM
 C LAT -2.80 DEG TILT DISTANCE 7.2
 C LONG -43.47 DEG D-LAT -2.21 DEG
 D LAT -43.35 DEG D LONG -43.35 DEG

MISSION/
FRAME NO.

1209 TIME 66C2S S/C POSITION ALT 50.21 KM TILT ANG 0.81 DEG
 YR. MO. DY HR. MI. SEC 132349.71 ALT RT 0.0378 KM/SEC TILT AZIM 82.01 DEG
 LAT -2.55 DEG SWING ANG 249.99 DEG INCID ANG 62.14 DEG
 LONG -43.23 DEG N.DEV. 347.97 DEG EMISS ANG 0.03 DEG
 PHASE ANG 62.96 DEG TILT DISTANCE 1.1
 ALPHA -0.83 DEG

SUN AZIM 86.95 DEG LATITUDE -2.52 DEG
 INCID ANG 62.27 DEG LONGITUDE -43.34 DEG
 EMISS ANG 0.70 DEG PHASE ANG 63.96 DEG
 ALPHA -0.79 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2.27 DEG AB 18.1 KM
 A LONG -43.07 DEG BC 4.5 KM
 B LAT -2.85 DEG CD 18.1 KM
 B LONG -43.19 DEG DA 4.5 KM
 C LAT -2.82 DEG TILT DISTANCE 8.5
 C LONG -43.34 DEG D-LAT -2.24 DEG
 D LAT -43.22 DEG D LONG -43.22 DEG

SUN AZIM 86.93 DEG LATITUDE -2.55 DEG
 INCID ANG 62.14 DEG LONGITUDE -43.21 DEG
 EMISS ANG 0.03 DEG PHASE ANG 62.96 DEG
 ALPHA -0.83 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2.27 DEG AB 18.1 KM
 A LONG -43.07 DEG BC 4.5 KM
 B LAT -2.85 DEG CD 18.1 KM
 B LONG -43.19 DEG DA 4.5 KM
 C LAT -2.82 DEG TILT DISTANCE 8.5
 C LONG -43.34 DEG D-LAT -2.24 DEG
 D LAT -43.22 DEG D LONG -43.22 DEG

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MISSION/

FRAME NO.

YR, MO, DY

HR, MI, SEC

S/C POSITION
 ALT 50.30 KM
 ALT RT 0.0389 KM/SEC
 LAT -2.58 DEG
 LONG -43.10 DEG

S/C ORIENTATION
 TILT ANG 0.93 DEG
 TILT AZIM 84.74 DEG
 SWING ANG 252.71 DEG
 N.DEV. 347.98 DEG

PHOTO ILLUMINATION
 SUN AZIM 86.90 DEG
 INCID ANG 62.00 DEG
 EMISS ANG 0.96 DEG
 PHASE ANG 62.96 DEG

PRINCIPAL POINT
 LATITUDE -2.57 DEG
 LONGITUDE -43.07 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2.03 DEG AB 41.3 KM
 A LONG -42.35 DEG BC 34.6 KM
 B LAT -3.36 DEG CD 40.8 KM
 B LONG -42.64 DEG DA 34.6 KM
 C LAT -3.11 DEG TILT DISTANCE 1.3
 C LONG -43.76 DEG
 D LAT -1.80 DEG
 D LONG -43.48 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2.30 DEG AB 18.1 KM
 A LONG -42.94 DEG BC 4.5 KM
 B LAT -3.88 DEG CD 18.1 KM
 B LONG -43.06 DEG DA 4.6 KM
 C LAT -2.85 DEG TILT DISTANCE 9.9
 C LONG -43.21 DEG
 D LAT -2.27 DEG
 D LONG -43.08 DEG

MISSION/

FRAME NO.

YR, MO, DY

HR, MI, SEC

S/C POSITION
 ALT 50.38 KM
 ALT RT 0.0400 KM/SEC
 LAT -2.60 DEG
 LONG -42.97 DEG

S/C ORIENTATION
 TILT ANG 1.06 DEG
 TILT AZIM 86.80 DEG
 SWING ANG 254.79 DEG
 N.DEV. 347.98 DEG

PHOTO ILLUMINATION
 SUN AZIM 86.88 DEG
 INCID ANG 61.87 DEG
 EMISS ANG 1.05 DEG
 PHASE ANG 62.96 DEG

PRINCIPAL POINT
 LATITUDE -2.60 DEG
 LONGITUDE -42.94 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2.32 DEG AB 18.2 KM
 A LONG -42.80 DEG BC 4.6 KM
 B LAT -2.91 DEG CD 18.1 KM
 B LONG -42.93 DEG DA 4.6 KM
 C LAT -2.68 DEG TILT DISTANCE 11.2
 C LONG -43.07 DEG
 D LAT -2.29 DEG
 D LONG -42.95 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2.32 DEG AB 18.2 KM
 A LONG -42.80 DEG BC 4.6 KM
 B LAT -2.91 DEG CD 18.1 KM
 B LONG -42.93 DEG DA 4.6 KM
 C LAT -2.68 DEG TILT DISTANCE 11.2
 C LONG -43.07 DEG
 D LAT -2.29 DEG
 D LONG -42.95 DEG

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MISSION/

FRAME NO.

1212 TIME 660629 S/C POSITION ALT 50-47 KM
YR-MO-DY MR-MI-SEC 132356.19 ALT RT 0.0411 KM/SEC
LAT -2-63 DEG SWING ANG 256.42 DEG
LONG -42.84 DEG NDEV. 347.99 DEG
LAT -2-63 DEG SWING ANG 256.42 DEG
LONG -42.84 DEG NDEV. 347.99 DEG
LAT -2-63 DEG SWING ANG 256.42 DEG
LONG -42.84 DEG NDEV. 347.99 DEG
LAT -2-63 DEG SWING ANG 256.42 DEG
LONG -42.84 DEG NDEV. 347.99 DEG

S/C ORIENTATION TILT ANG 1-19 DEG
TILT AZIM 88.43 DEG
SWING ANG 256.42 DEG
PHASE ANG 62.96 DEG
ALPHA -1-22 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2-08 DEG AB 41.5 KM
A LONG -42.08 DEG BC 34.8 KM
B LAT -3-42 DEG CD 40.9 KM
B LONG -42.37 DEG DA 34.9 KM
C LAT -3-17 DEG TILT DISTANCE 1.6
C LONG -43.49 DEG
D LAT -1-65 DEG
D LONG -43.21 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -2-35 DEG AB 18.2 KM
A LONG -42.67 DEG BC 4.6 KM
B LAT -2-94 DEG CD 18.2 KM
B LONG -42.79 DEG DA 4.6 KM
C LAT -2-91 DEG TILT DISTANCE 1.2
C LONG -42.94 DEG
D LAT -2-32 DEG
D LONG -42.82 DEG

MISSION/

FRAME NO.

1213 TIME 660629 S/C POSITION ALT 50-56 KM
YR-MO-DY MR-MI-SEC 132356.36 ALT RT 0.0422 KM/SEC
LAT -2-66 DEG SWING ANG 257.73 DEG
LONG -42.71 DEG NDEV. 348.00 DEG

S/C ORIENTATION TILT ANG 1-32 DEG
TILT AZIM 89.73 DEG
SWING ANG 257.73 DEG
NDEV. 62.96 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -2-38 DEG AB 18.2 KM
A LONG -42.53 DEG BC 4.6 KM
B LAT -2-97 DEG CD 18.2 KM
B LONG -42.66 DEG DA 4.6 KM
C LAT -2-93 DEG TILT DISTANCE 1.4
C LONG -42.81 DEG
D LAT -2-35 DEG
D LONG -42.68 DEG

S/C ORIENTATION TILT ANG 1-32 DEG
TILT AZIM 86.83 DEG
EMISS ANG 61.61 DEG
PHASE ANG 1-36 DEG
ALPHA -1-36 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -2-38 DEG AB 18.2 KM
A LONG -42.53 DEG BC 4.6 KM
B LAT -2-97 DEG CD 18.2 KM
B LONG -42.66 DEG DA 4.6 KM
C LAT -2-93 DEG TILT DISTANCE 1.4
C LONG -42.81 DEG
D LAT -2-35 DEG
D LONG -42.68 DEG

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MISSION/

FRAME NO.

1214

YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	66CE2S	ALT 50.65 KM ALT RT 0.0433 KM/SEC	TILT ANG 1.45 DEG TILT AZIM 50.81 DEG SWING ANG 258.81 DEG N.DEV. 348.00 DEG	SUN AZIM 86.80 DEG INCID ANG 61.48 DEG EMISS ANG 1.49 DEG PHASE ANG 62.96 DEG ALPHA -1.49 DEG	LATITUDE -2.68 DEG LONGITUDE -42.54 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.13 DEG	AB 41.7 KM
A LONG -41.81 DEG	BC 34.9 KM
B LAT -3.48 DEG	CD 41.3 KM
B LONG -42.10 DEG	DA 35.1 KM
C LAT -3.23 DEG	TILT DISTANCE 2.0
C LONG -43.23 DEG	
D LAT -1.90 DEG	
D LONG -42.55 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	-2.40 DEG
A LONG	-42.40 DEG
B LAT	-2.99 DEG
B LONG	-42.53 DEG
C LAT	-2.96 DEG
C LONG	-42.67 DEG
D LAT	-2.37 DEG
D LONG	-42.55 DEG

MISSION/

FRAME NO.

1215

YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	660E29	ALT 50.75 KM ALT RT 0.0444 KM/SEC	TILT ANG 1.58 DEG TILT AZIM 51.70 DEG SWING ANG 259.71 DEG N.DEV. 348.01 DEG	SUN AZIM 86.78 DEG INCID ANG 61.34 DEG EMISS ANG 1.63 DEG PHASE ANG 62.56 DEG ALPHA -1.62 DEG	LATITUDE -2.71 DEG LONGITUDE -42.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.16 DEG	AB 41.8 KM
A LONG -41.67 DEG	BC 35.0 KM
B LAT -3.51 DEG	CD 41.0 KM
B LONG -41.96 DEG	DA 35.1 KM
C LAT -3.26 DEG.	TILT DISTANCE 2.2
C LONG -42.09 DEG	
D LAT -1.93 DEG	
D LONG -42.81 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	-2.43 DEG
A LONG	-42.27 DEG
B LAT	-3.02 DEG
B LONG	-42.39 DEG
C LAT	-2.99 DEG
C LONG	-42.54 DEG
D LAT	-2.40 DEG
D LONG	-42.41 DEG

CORNER COORDINATE	SIDE LENGTH
A LAT	-2.40 DEG
A LONG	-42.40 DEG
B LAT	-2.99 DEG
B LONG	-42.55 DEG
C LAT	-2.96 DEG
C LONG	-42.67 DEG
D LAT	-2.37 DEG
D LONG	-42.55 DEG

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MISSION /

FRAME NO.

2005

YR. MO. DY

HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	661118	ALT 52°25' KM ALT RT -0.0476 KM/SEC	TILT ANG 1°23' DEG TILT AZIM 286°40' DEG	SUN AZIM 91°47' DEG INCID. ANG 74°47' DEG	LATITUDE 4°25' DEG LONGITUDE 35°99' DEG
	152452.91	LAT 4°24' DEG LAT 36.02 DEG	SWING ANG 95°43' DEG N.DEV. 348°53' DEG	EMISS ANG 1°26' DEG PHASE ANG 73°25' DEG	
		LONG		ALPHA 1.02' DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4°22' DEG	AB 42°4' KM
A LONG 36°72' DEG	BC 36°1' KM
B LAT 3°45' DEG	CD 43°0' KM
B LONG 26°44' DEG	DA 36°2' KM
C LAT 3°57' DEG	TILT DISTANCE 1°6'
C LONG 35°27' DEG	
D LAT 5°07' DEG	
D LONG 35°54' DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4°54' DEG	AB 18°8' KM
A LONG 36°13' DEG	BC 4°7' KM
B LAT 3°93' DEG	CD 18°8' KM
B LONG 36°00' DEG	DA 4°7' KM
C LAT 3°96' DEG	TILT DISTANCE 13°6'
C LONG 35°85' DEG	
D LAT 4°57' DEG	
D LONG 35°97' DEG	

MISSION /

FRAME NO.

2006

YR. MO. DY

HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	661118	ALT 52°15' KM ALT RT -0.0465 KM/SEC	TILT ANG 1°10' DEG TILT AZIM 287°47' DEG	SUN AZIM 91°48' DEG INCID. ANG 74°34' DEG	LATITUDE 4°22' DEG LONGITUDE 36°12' DEG
	152455.03	LAT 4°21' DEG LONG 36°15' DEG	SWING ANG 96°08' DEG N.DEV. 348°62' DEG	EMISS ANG 1°13' DEG PHASE ANG 73°25' DEG	
				ALPHA 1.08' DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4°79' DEG	AB 42°3' KM
A LONG 36°85' DEG	BC 36°9' KM
B LAT 3°42' DEG	CD 42°9' KM
B LONG 26°57' DEG	DA 36°1' KM
C LAT 3°55' DEG	TILT DISTANCE 1°5'
C LONG 35°40' DEG	
D LAT 5°04' DEG	
D LONG 35°68' DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4°51' DEG	AB 18°7' KM
A LONG 36°26' DEG	BC 4°7' KM
B LAT 3°90' DEG	CD 18°8' KM
B LONG 36°14' DEG	DA 4°7' KM
C LAT 3°93' DEG	TILT DISTANCE 11°6'
C LONG 35°98' DEG	
D LAT 4°54' DEG	
D LONG 36°10' DEG	

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MISSION / FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2007 YR, MO, DY HR, MI, SEC	661118	ALT 52.05 KM ALT RT -0.0454 KM/SEC	TILT ANG 0.97 DEG TILT AZIM 288.31 DEG	SUN AZIM 91.48 DEG INCID ANG 74.20 DEG	LATITUDE 4.20 DEG LONGITUDE 36.25 DEG
	152457.15	LAT 4.19 DEG LONG 36.28 DEG	SWING ANG 96.92 DEG N.DEV. 348.61 DEG	EMISS ANG 1.00 DEG PHASE ANG 73.25 DEG	

MEDIUM RESOLUTION		SIDE LENGTH
CCNR	COORDINATE	
A LAT	4.77 DEG	AB 42.3 KM
A LONG	36.58 DEG	BC 39.9 KM
B LAT	3.40 DEG	CD 42.8 KM
B LONG	36.70 DEG	DA 36.1 KM
C LAT	3.62 DEG	TILT DISTANCE
C LONG	35.53 DEG	1.3
D LAT	5.01 DEG	
D LONG	35.81 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	4.48 DEG	AB
A LONG	36.99 DEG	BC
B LAT	3.88 DEG	CD
B LONG	36.27 DEG	DA
C LAT	3.91 DEG	TILT
C LONG	36.11 DEG	
D LAT	4.51 DEG	
D LONG	36.24 DEG	

PHOTO ILLUMINATION	SUN AZIM	91.48 DEG	PRINCIPAL POINT	4.20 DEG
INCID ANG	74.20 DEG	LATITUDE	36.25 DEG	
EMISS ANG	1.00 DEG	LONGITUDE		
PHASE ANG	73.25 DEG			
ALPHA-	0.95 DEG			

S/C POSITION		MEDIUM RESOLUTION	
E	SIDE LENGTH	COORDINATE	ANGLE
118	ALT	52.05	KM
457.15	ALT RT	-0.0454	KM/SEC
	LAT	4.19	DEG
	LONG	36.28	DEG
	CORNER COORDINATE	SIDE LENGTH	ANGLE
A	4.77 LAT	42.3 AB	KM
B	36.58 LONG	35.9 BC	KM
C	3.40 LAT	42.8 CD	KM
D	36.70 LONG	36.1 DA	KM
			TILT DISTANCE
			1.3

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PHOTO ILLUMINATION	PRINCIPAL POINT	POINT
SUN AZIM	91.48 DEG	4.17 DEG
INCID ANG	74.07 DEG	36.38 DEG
EMISS ANG	0.86 DEG	
PHASE ANG	73.25 DEG	
	3.02 SEC	
	3.02 SEC	

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	4.74 DEG	AB 42.3 KM
A LONG	37.11 DEG	BC 35.9 KM
B LAT	3.37 DEG	CD 42.7 KM
B LONG	26.83 DEG	DA 36.0 KM
C LAT	3.60 DEG	TI LT DISTANC E 1.1
C LONG	35.67 DEG	
D LAT	4.98 DEG	
D LONG	35.94 DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	4.46 DEG	.AB 18.7 KM
A LONG	36.52 DEG	BC 4.7 KM
B LAT	3.85 DEG	CD 18.7 KM
B LONG	36.40 DEG	DA 4.7 KM
C LAT	3.88 DEG	TILT DISTANCE
C LONG	36.25 DEG	B.9
D LAT	4.49 DEG	
D LONG	36.37 DEG	

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MISSION/
FRAME NO.

2009 YR.HD.DY

1525 3.4S

TIME S/C POSITION

ALT	51.86 KM	TILT ANG	0.71 DEG
ALT RT	-0.0432 KM/SEC	TILT AZIM	290.90 DEG
LAT	4.14 DEG	SWING ANG	99.49 DEG
LONG	36.53 DEG	N.DEV.	348.59 DEG.

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	4.71 DEG	AB 42.2 KM
A LONG	37.24 DEG	BC 35.8 KM
B LAT	3.35 DEG	CD 42.6 KM
B LONG	36.56 DEG	DA 35.9 KM
C LAT	3.57 DEG	TILT DISTANCE
C LONG	35.80 DEG	0.9
D LAT	4.55 DEG	
D LONG	36.08 DEG	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM 91.49 DEG	LATITUDE 4.14 DEG
TILT AZIM	INCID ANG 73.94 DEG	LONGITUDE 36.51 DEG
SWING ANG	EMIS ANG 0.73 DEG	
N.DEV.	PHASE ANG 73.25 DEG	
	ALPHA- 0.59 DEG	

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	4.43 DEG	AB 18.6 KM
A LONG	36.65 DEG	BC 4.7 KM
B LAT	3.83 DEG	CD 18.7 KM
B LONG	36.53 DEG	DA 4.7 KM
C LAT	3.86 DEG	TILT DISTANCE
C LONG	36.38 DEG	7.5
D LAT	4.46 DEG	
D LONG	36.50 DEG	

MISSION/
FRAME NO.

2010 YR.HD.DY

1525 3.4S

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	51.77 KM	TILT ANG 0.58 DEG	SUN AZIM 91.49 DEG
ALT RT	-0.0421 KM/SEC	TILT AZIM 293.03 DEG	INCID ANG 73.81 DEG
LAT	4.11 DEG	SWING ANG 101.61 DEG	EMIS ANG 0.60 DEG
LONG	36.66 DEG	N.DEV.	PHASE ANG 73.25 DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	4.40 DEG	AB 18.6 KM
A LONG	36.78 DEG	BC 4.7 KM
B LAT	3.80 DEG	CD 18.6 KM
B LONG	36.66 DEG	DA 4.7 KM
C LAT	3.83 DEG	TILT DISTANCE
C LONG	36.51 DEG	6.1
D LAT	4.43 DEG	
D LONG	36.63 DEG	

CORNER	COORDINATE	SIDE LENGTH
A LAT	4.43 DEG	AB 18.6 KM
A LONG	36.65 DEG	BC 4.7 KM
B LAT	3.83 DEG	CD 18.7 KM
B LONG	36.53 DEG	DA 4.7 KM
C LAT	3.86 DEG	TILT DISTANCE
C LONG	36.38 DEG	7.5
D LAT	4.46 DEG	
D LONG	36.50 DEG	

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MISSION/

FRAME NO.

2011 TIME 661118 S/C POSITION ALT 51° 69' KM SEC
 YR, MO, DY 152 E 5.60 ALT RT -0.0410 KM SEC
 HR, MIN, SEC LAT 4° 08' DEG SWING ANG 104° 93' DEG
 LONG 36.79 DEG N, DEV. 348° 57' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4° 46' DEG	AB 42.1 KM
A LONG 37° 51' DEG	BC 35.7 KM
B LAT 3° 29' DEG	CD 42.3 KM
B LONG 37° 23' DEG	DA 35.8 KM
C LAT 3° 52' DEG	TILT DISTANCE 0.6
C LONG 36° 07' DEG	
D LAT 4° 50' DEG	
D LONG 36° 34' DEG	

S/C ORIENTATION TILT ANG 0° 46' DEG SUN AZIM 91° 49' DEG PRINCIPAL POINT LATITUDE 4° 09' DEG
 TILT AZIM 295.36 DEG INCID ANG 73.68 DEG LONGITUDE 36.76 DEG
 SWING ANG 104° 93' DEG EMISS ANG 0° 47' DEG
 N, DEV. 348° 57' DEG PHASE ANG 73.25 DEG
 ALPHA 0° 43' DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	AB 18.6 KM
A LONG	BC 4.7 KM
B LAT	CD 18.6 KM
B LONG	DA 4.7 KM
C LAT	TILT DISTANCE 4.8
C LONG	
D LAT	
D LONG	

MISSION/

FRAME NO.

2012 TIME 661118 S/C POSITION ALT 51° 60' KM SEC
 YR, MO, DY 152 E 7.71 ALT RT -0.0399 KM SEC
 HR, MIN, SEC LAT 4° 06' DEG SWING ANG 110° 74' DEG PRINCIPAL POINT LATITUDE 4° 06' DEG
 LONG 36.92 DEG N, DEV. 348° 56' DEG EMISS ANG 0° 34' DEG
 ALPHA 73.25 DEG PHASE ANG 73.25 DEG
 ALPHA 0° 29' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4° 63' DEG	AB 42.1 KM
A LONG 37° 64' DEG	BC 35.5 KM
B LAT 3° 27' DEG	CD 42.2 KM
B LONG 37° 36' DEG	DA 35.7 KM
C LAT 3° 50' DEG	TILT DISTANCE 0.5
C LONG 36° 20' DEG	
D LAT 4° 87' DEG	
D LONG 36° 47' DEG	

S/C ORIENTATION TILT ANG 0° 33' DEG SUN AZIM 91° 49' DEG PRINCIPAL POINT LATITUDE 4° 06' DEG
 TILT AZIM 302.18 DEG INCID ANG 73.55 DEG LONGITUDE 36.91 DEG
 SWING ANG 110° 74' DEG EMISS ANG 0° 34' DEG
 N, DEV. 348° 56' DEG PHASE ANG 73.25 DEG
 ALPHA 0° 29' DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	AB 18.5 KM
A LONG	BC 4.7 KM
B LAT	CD 18.6 KM
B LONG	DA 4.7 KM
C LAT	TILT DISTANCE 3.5
C LONG	
D LAT	
D LONG	

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MISSION/
FRAME NO.

2013 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°52' KM SUN AZIM 91°50' DEG LATITUDE 4°34' DEG
 HR, MI, SEC ALT RT -0.0388 KM/SEC INCID ANG 73°41' DEG LONGITUDE 37°04' DEG
 LAT 4°03' DEG SWING ANG 123°07' DEG EMISS ANG 0°22' DEG
 LONG 37.04' DEG N.DEV. 348.55' DEG PHASE ANG 73°25' DEG
 ALPHA 0.16' DEG

MISSION/
FRAME NO.

2014 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°44' KM TILT ANG 0°13' DEG LATITUDE 4°01' DEG
 HR, MI, SEC ALT RT -0.0378 KM/SEC TILT AZIM 347°55' DEG LONGITUDE 37.17' DEG
 LAT 4°01' DEG SWING ANG 156°20' DEG EMISS ANG 0°13' DEG
 LONG 37.17' DEG N.DEV. 348.54' DEG PHASE ANG 73°25' DEG
 ALPHA 0.03' DEG

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MISSION/
FRAME NO.

2013 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°52' KM SUN AZIM 91°50' DEG LATITUDE 4°34' DEG
 HR, MI, SEC ALT RT -0.0388 KM/SEC INCID ANG 73°41' DEG LONGITUDE 37°04' DEG
 LAT 4°03' DEG SWING ANG 123°07' DEG EMISS ANG 0°22' DEG
 LONG 37.04' DEG N.DEV. 348.55' DEG PHASE ANG 73°25' DEG
 ALPHA 0.16' DEG

MISSION/
FRAME NO.

2014 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°44' KM TILT ANG 0°13' DEG LATITUDE 4°01' DEG
 HR, MI, SEC ALT RT -0.0378 KM/SEC TILT AZIM 347°55' DEG LONGITUDE 37.17' DEG
 LAT 4°01' DEG SWING ANG 156°20' DEG EMISS ANG 0°13' DEG
 LONG 37.17' DEG N.DEV. 348.54' DEG PHASE ANG 73°25' DEG
 ALPHA 0.03' DEG

MISSION/
FRAME NO.

2014 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°44' KM TILT ANG 0°13' DEG LATITUDE 4°01' DEG
 HR, MI, SEC ALT RT -0.0378 KM/SEC TILT AZIM 347°55' DEG LONGITUDE 37.17' DEG
 LAT 4°01' DEG SWING ANG 156°20' DEG EMISS ANG 0°13' DEG
 LONG 37.17' DEG N.DEV. 348.54' DEG PHASE ANG 73°25' DEG
 ALPHA 0.03' DEG

MISSION/
FRAME NO.

2014 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 51°44' KM TILT ANG 0°13' DEG LATITUDE 4°01' DEG
 HR, MI, SEC ALT RT -0.0378 KM/SEC TILT AZIM 347°55' DEG LONGITUDE 37.17' DEG
 LAT 4°01' DEG SWING ANG 156°20' DEG EMISS ANG 0°13' DEG
 LONG 37.17' DEG N.DEV. 348.54' DEG PHASE ANG 73°25' DEG
 ALPHA 0.03' DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

TIME

S/C POSITION	TIME	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 51°36' KM	66118	TILT ANG 0°14' DEG	SUN AZIM 91°50' DEG	LATITUDE 3°99' DEG
ALT RT -0.0367 KM/SEC	YR, MO, DY	TILT AZIM 44°46' DEG	INCID ANG 73°15' DEG	LONGITUDE 37°30' DEG
LAT 3°98' DEG	152514.02	SWING ANG 213°00' DEG	EMIS ANG 0°15' DEG	
LONG 37°30' DEG	HR, MI, SEC	N.DEV. 348°54' DEG	PHASE ANG 73°25' DEG	
				ALPHA -0°10' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 4°55' DEG	AB 42.0 KM	CORNER COORDINATE SIDE LENGTH
A LONG 28°03' DEG	BC 35.4 KM	A LAT 4°27' DEG AB 18.5 KM
B LAT 3°19' DEG	CD 41°9' KM	A LONG 37°43' DEG BC 4°6 KM
B LONG 37°75' DEG	DA 35.6 KM	B LAT 3°67' DEG CD 18.5 KM
C LAT 3°43' DEG	TILT DISTANCE 0.3	B LONG 37°31' DEG DA 4°6 KM
C LONG 36°50' DEG		C LAT 3°70' DEG TILT DISTANCE
D LAT 4°78' DEG		C LONG 37°16' DEG 1.5
D LONG 36°87' DEG		D LAT 4°30' DEG
		D LONG 37°28' DEG

MISSION/

FRAME NO.

TIME

S/C POSITION	TIME	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 51°28' KM	66118	TILT ANG 0°24' DEG	SUN AZIM 91°50' DEG	LATITUDE 3°96' DEG
ALT RT -0.0356 KM/SEC	YR, MO, DY	TILT AZIM 71°51' DEG	INCID ANG 73°02' DEG	LONGITUDE 37°43' DEG
LAT 3°96' DEG	152516.12	SWING ANG 240°04' DEG	EMIS ANG 0°24' DEG	
LONG 37°42' DEG	HR, MI, SEC	N.DEV. 348°53' DEG	PHASE ANG 73°25' DEG	
				ALPHA -0°23' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 4°53' DEG	AB 42.0 KM	CORNER COORDINATE SIDE LENGTH
A LONG 38°16' DEG	BC 35.4 KM	A LAT 4°24' DEG AB 18.4 KM
B LAT 3°17' DEG	CD 41°8' KM	A LONG 37°56' DEG BC 4°6 KM
B LONG 37°88' DEG	DA 35.5 KM	B LAT 3°65' DEG CD 18.4 KM
C LAT 3°40' DEG	TILT DISTANCE 0.4	B LONG 37°44' DEG DA 4°6 KM
C LONG 36°73' DEG		C LAT 3°68' DEG TILT DISTANCE
D LAT 4°76' DEG		C LONG 37°29' DEG 2.5
D LONG 37°00' DEG		D LAT 4°27' DEG
		D LONG 37°41' DEG

S/C POSITION	TIME	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 51°28' KM	04/10/71	TILT ANG 0°24' DEG	SUN AZIM 91°50' DEG	LATITUDE 3°96' DEG
ALT RT -0.0356 KM/SEC	04/10/71	TILT AZIM 71°51' DEG	INCID ANG 73°02' DEG	LONGITUDE 37°43' DEG
LAT 3°96' DEG	04/10/71	SWING ANG 240°04' DEG	EMIS ANG 0°24' DEG	
LONG 37°42' DEG	04/10/71	N.DEV. 348°53' DEG	PHASE ANG 73°25' DEG	
				ALPHA -0°23' DEG

LUNAR CRATER PHOTOGRAPHIC SHEET SETTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION /
FRAME NO.:

TIME	S/C POSITION	S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		KN	DEG	SUN AZIM	DEG	LATITUDE	DEG
6:61 11.8	ALT	51.21	DEG	TILT ANG	0.36	91.51	DEG
1:52 51.8 22	ALT RT	-0.0345	KM/SEC	TILT AZIM	81.93	72.89	DEG
	LAT	3.93	DEG	SWING ANG	250.45	0.37	DEG
	LONG	37.55	DEG	N.DEG.	348.52	73.25	DEG
				PHASE ANG		70.36	DEG
				ALPHA			

RESOLUTION	COORDINATE	SIDE LENGTH
MEDIUM	A LAT	4.50 DEG
	A LONG	26.29 DEG
	B LAT	3.14 DEG
	B LONG	36.51 DEG
	C LAT	3.38 DEG
	C LONG	36.86 DEG
	D LAT	4.73 DEG.
	D LONG	37.13 DEG

HIGH RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	4°22 DEG	A B 18.4 KM
A LONG	37°59 DEG	B C 4°6 KM
B LAT	32°22 DEG	C D 18.4 KM
B LONG	37°57 DEG	D A 4°6 KM
C LAT	3°55 DEG	TILT DISTANCE
C LONG	37°42 DEG	3.7
D LAT	4°25 DEG	
D LONG	37°54 DEG	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
0.36 DEG	91.51 DEG	3.93 DEG
TILT AZIM	INCLD ANG	LONGITUDE
81.93 DEG	72.89 DEG	37.56 DEG
SWING ANG	EWISS ANG	
250.45 .DEG	0.37 DEG	
N.DEG.	PHASE ANG	
348.52 DEG	73.25 DEG	
	ALPHA	-0.36 DEG

IN	SIDE LENGTH	FT	ILT DISTANCE
B	18*4	KH	
C	4*6	KH	
D	18*4	KH	
A	4*6	KM	
			3*7

MISSIONS
FRANCE.

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
66118 152°20.31	ALT ALT RT LAT LONG	51.14 -0.0334 3°.91 37.67	KM KM/SEC DEG DEG	SUN AZIM INCID ANG SWING ANG N.DEV.
			0.48 87.06 255.57 348.51	DEG DEG DEG DEG
			91.51 72.76 0.49 73.25	DEG DEG DEG DEG
				3°.91 DEG 37.69 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE	ANGLE DEG	
A LAT	4.47 DEG	AB 41°
A LONG	38.42 DEG	BC 35°
B LAT	3.12 DEG	CD 41°
B LONG	38.14 DEG	DA 35°
C LAT	3.35 DEG	TI LT DI
C LONG	36.59 DEG	0°
D LAT	4.70 DEG	
D LONG	37.27 DEG	

HIGH RESOLUTION					
CORNER	COORDINATE	SIDE	AB	BC	DA
A LAT	4.19 DEG				
B LONG	37.82 DEG				
C LAT	3.60 DEG				
D LONG	37.70 DEG				
E LAT	3.63 DEG				TIL
F LONG	37.55 DEG				
G LAT	4.22 DEG				
H LONG	37.67 DEG				

LUNAR CRATER PHOTOGRAFIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 24/12/71 PAGE 111

INDISI

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 51°07' KM	TILT ANG 0.60 DEG	SUN AZIM 91°51' DEG	LATITUDE 3°88' DEG
ALT RT -0.0323 KM/SEC	TILT AZIM 90.09 DEG	INCID ANG 72.63 DEG	LONGITUDE 37.82 DEG
LAT 3°88' DEG	SWING ANG 258.59 DEG	EMISS ANG 0.62 DEG	
LONG 37.82 DEG	N.DEV. 348.50 DEG	PHASE ANG 73.25 DEG	
			ALPHA -0.62 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	4.45 DEG	AB 41.9 H
A LONG	38.55 DEG	BC 35.3 H
B LAT	3.9 DEG	CD 41.6 H
B LONG	38.37 DEG	DA 35.4 H
C LAT	3.33 DEG	TIKT DIST 0.9
C LONG	31.12 DEG	
D LAT	4.67 DEG	
D LONG	37.40 DEG	

HIGH RESOLUTION		SIDE LENGTH	
CORNER	COORDINATE	DEG	DEG
A LAT	4.15	4B	18.4 KI
A LONG	37.95	BC	4.6 KI
B LAT	3.95	CD	18.3 KI
B LONG	37.83	DA	4.6 KI
C LAT	3.60	TILT DISTAN	
C LONG	37.68	DEG	6.4
D LAT	4.19	DEG	
D LONG	37.80	DEG	

PHOTO ILLUMINATION		PRINCIPAL POINT		PHOTO ILLUMINATION		PRINCIPAL POINT		PHOTO ILLUMINATION		PRINCIPAL POINT	
SUN AZIM	91.51 DEG	LATITUDE	3.88 DEG	SUN AZIM	91.51 DEG	LATITUDE	3.85 DEG	SUN AZIM	91.51 DEG	LATITUDE	3.95 DEG
INCID ANG	72.63 DEG	LONGITUDE	37.82 DEG	INCID ANG	72.50 DEG	LONGITUDE	37.95 DEG	EMISS ANG	0.62 DEG	LONGITUDE	37.95 DEG
SWISS ANG	0.62 DEG			EMMISS ANG	0.75 DEG			PHASE ANG	73.25 DEG		
PHASE ANG	73.25 DEG			PHASE ANG	73.25 DEG			ALPHA	-0.62 DEG		
ALPHA	-0.62 DEG			ALPHA	-0.75 DEG			ALPHA	-0.75 DEG		
HIGH RESOLUTION											
VERTNER	COORDINATE	SIDE LENGTH	VERTNER	COORDINATE	SIDE LENGTH	VERTNER	COORDINATE	SIDE LENGTH			
LAT	4.15 DEG	AB 18.4 KM	LAT	37.95 DEG	BC 4.6 KM	LAT	37.95 DEG	BC 18.3 KM			
LONG	37.95 DEG	CD 18.3 KM	LONG	3.57 DEG	DA 4.6 KM	LONG	3.57 DEG	DA 4.6 KM			
LAT	3.57 DEG	TILT DISTANCE	LONG	3.60 DEG	6.4	LAT	3.60 DEG	TILT DISTANCE			
LONG	3.60 DEG		LONG	37.68 DEG		LONG	37.68 DEG				
LAT	4.19 DEG		LONG	37.80 DEG		LAT	4.19 DEG				
LONG	37.80 DEG		LAT	37.80 DEG		LONG	37.80 DEG				

MISSION/

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	KH	TILT ANG 0°73 DEG	SUN AZIM 91°51 DEG
ALT RT	KM/SEC	TILT AZIM 92°07 DEG	INCID ANG 72°50 DEG
LAT	3°86	SWING ANG 260°56 DEG	EMISS ANG 9°75 DEG
LONG	37°93	NDEV. 348°49 DEG	PHASE ANG 73°25 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	DEG
A LAT	4. ^o 42	AB 41. ⁹ KM
A LONG	36. ⁶⁸	BC 35. ² KM
B LAT	3. ⁰⁰	CD 41. ⁵ KM
B LONG	38. ⁴⁰	DA 25. ³ KM
C LAT	3. ³⁰	TILT DISTANCE 1. ¹
C LONG	37. ²⁶	DEG
D LAT	4. ⁶⁵	DEG
D LONG	37. ⁵³	DEG

HIGH RESOLUTION		S1
CORNER	COORDINATE	DEG
A LAT	4.14	AB
A LONG	3B.08	BC
B LAT	3.54	CD
B LONG	37.96	DA
C LAT	3.57	TII
C LONG	37.81	DEG
D LAT	4.17	DEG
D LONG	37.93	DEG

LUNAR GRAITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/19/71

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MISSION/
FRAME NO.

2021

TIME

66118

YR, MO, DY

HR, MIN, SEC

152612.81

S/C POSITION

ALT RT -0.0052

KM/SEC

LAT 3.27 DEG

LONG 40.84 DFG

N.DEV.

S/C ORIENTATION

TILT ANG 3.77 DEG

TILT AZIM 99.35 DEG

SWING ANG. 267.73 DFG

PHASE ANG 73.33 DEG

ALPHA -3.85 DEG

PRINCIPAL POINT

LATITUDE 3.25 DEG

LONGITUDE 40.95 DEG

MISSION/
FRAME NO.

2022

TIME

66118

YR, MO, DY

HR, MIN, SEC

152614.91

S/C POSITION

ALT -0.50.09 KM

TILT ANG 3.90 DEG

TILT AZIM 99.43 DEG

SWING ANG 267.80 DEG

N.DEV.

PHASE ANG 73.33 DEG

ALPHA -3.98 DEG

PRINCIPAL POINT

LATITUDE 3.22 DEG

LONGITUDE 41.08 DEG

PHOTO ILLUMINATION

SUN AZIM 91.51 DEG

INCID ANG 69.49 DEG

EMISS ANG 4.01 DEG

PHASE ANG 73.33 DEG

ALPHA -3.98 DEG

MISSION/
FRAME NO.

2023

TIME

66118

YR, MO, DY

HR, MIN, SEC

152612.81

S/C POSITION

ALT 0.50 KM

TILT ANG 3.24 DEG

TILT AZIM 99.36 DEG

SWING ANG 267.80 DEG

N.DEV.

PHASE ANG 73.33 DEG

ALPHA -3.98 DEG

PRINCIPAL POINT

LATITUDE 3.22 DEG

LONGITUDE 41.08 DEG

PHOTO ILLUMINATION

SUN AZIM 91.51 DEG

INCID ANG 69.36 DEG

EMISS ANG 4.01 DEG

PHASE ANG 73.33 DEG

ALPHA -3.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.53 DEG	AB 18.1 KM
A LONG 41.08 DEG	BC 4.5 KM
B LAT 2.94 DEG	CD 18.0 KM
B LONG 43.95 DEG	DA 4.6 KM
C LAT 2.97 DEG	TILT DISTANCE
C LONG 43.81 DEG	
D LAT 3.55 DEG	
D LONG 40.93 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.50 DEG	AB 18.1 KM
A LONG 41.21 DEG	BC 4.5 KM
B LAT 2.91 DEG	CD 18.0 KM
B LONG 41.09 DEG	DA 4.6 KM
C LAT 2.95 DEG	TILT DISTANCE
C LONG 40.94 DEG	
D LAT 3.53 DEG	
D LONG 41.06 DEG	

MISSION/
FRAME NO.

2024

TIME

66118

YR, MO, DY

HR, MIN, SEC

152614.91

S/C POSITION

ALT 0.50 KM

TILT ANG 3.24 DEG

TILT AZIM 99.36 DEG

SWING ANG 267.80 DEG

N.DEV.

PHASE ANG 73.33 DEG

ALPHA -3.98 DEG

PRINCIPAL POINT

LATITUDE 3.22 DEG

LONGITUDE 41.08 DEG

PHOTO ILLUMINATION

SUN AZIM 91.51 DEG

INCID ANG 69.36 DEG

EMISS ANG 4.01 DEG

PHASE ANG 73.33 DEG

ALPHA -3.98 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

SUBLIST ORDERED BY MISSION AND FRAME NUMBER

PAGE ELEVEN

84/1871

MISSIONS

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50°08' KM ALT RT -0.0641 KM/SEC LAT 3.21 DEG	ALT ANG 4°03' DEG TILT AZIM 99.51 DEG SWING ANG 267.87 DEG	SUN AZIM 91.52 DEG INCID ANG 69.42 DEG EMISS ANG 4.15 DEG	LATITUDE 31.9 DEG LONGITUDE 41.21 DEG

S/C POSITION	S/C ORIENTATION
ALT RT -0.0041 LAT 3.21	KN/SEC DEG
ALT 50.08 RT -0.0041 LAT 3.21	TILT ANG AZIM SWING ANG
	4.0 99.5 267.8

023 YR, MO, DY
TIME 66111
FR, MI, SEC 15261

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MEDIUM RESOLUTION		HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	CORNER	COORDINATE	SIDE LENGTH
A LAT.	3.76 DEG	AB 42.1 KM	A LAT.	3.47 DEG	AB 18.1 KM
A LONG.	41.54 DEG	BC 34.8 KM	A LONG.	41.34 DEG	BC 4.5 KM
B LAT.	2.50 DEG	CD 40.0 KM	B LAT.	2.89 DEG	CD 18.0 KM
B LONG.	41.65 DEG	DA 34.9 KM	B LONG.	41.22 DEG	DA 4.6 KM
C LAT.	2.66 DEG	TILT DISTANCE	C LAT.	2.92 DEG	TIILT DISTANCE
C LONG.	40.53 DEG	5.5	C LONG.	41.07 DEG	
D LAT.	3.56 DEG		D LAT.	3.650 DEG	
D LONG.	40.80 DEG		D LONG.	41.19 DEG	

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
E	ALT 50.07 KH	TILT ANG 4.16 DEG	SUN AZIM 91.51 DEG	LATITUDE 3.17 DEG
1118	ALT RT ~0.0030 KM/SEC	TILT AZIM 99.58 DEG	INCID ANG 69.09 DEG	LONGITUDE 41.34 DEG
€19.11	LAT 3.19 DEG	SWING ANG 267.93 DEG	EMISS ANG 4.28 DEG	
	LONG 41.22 DEG	N.DEV. 348.37 DEG	PHASE ANG 73.33 DEG	
			ALPHA -4.24 DEG	

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	3.73 DEG	AB 4.2-1 KM
A LONG	42.07. DEG	BC 34.3 KM
B LAT	2.37 DEG	CD 4.0 KM
B LONG	41.78 DEG	DA 34.9 KM
C LAT	2.64 DEG	TILT DISTANCE
C LONG	40.66 DEG	5.8
D LAT	3.53 DEG	
D LONG	40.53 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	3.45 DEG	AB
A LONG	41.47 DEG	BC
B LAT	2.86 DEG	CD
B LONG	41.35 DEG	DA
C LAT	2.89 DEG	TILT
C LONG	41.20 DEG	
D LAT	3.47 DEG	
D LONG	41.32 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/19/71

MISSION /

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT	TILT ANG	SUN AZIM	LATITUDE
6C1118	50°.64 KM	11.90 DEG	91.44 DEG	3.57 DEG
1E5359.B1	ALT RT -0.0309 KM/SEC	TILT AZIM 137.19 DEG	TILT ANG 72.34 DEG	LONGITUDE 36.34 DEG
	LAT 3°.83 DEG	SWING ANG 306.43 DEG	EMISS ANG 12.26 DEG	
	LONG 36.10 DEG	N.DEV. 349.89 DEG	PHASE ANG 81.06 DEG	

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	4°15' DEG	AB 45.7 KI
A LONG	37.07' DEG	BC 38.0 KI
B LAT	2°65' DEG	CD 40.3 KI
B LONG	36.88' DEG	DA 34.7 KI
C LAT	3°00' DEG	TILT DISTANCE
C LONG	25°64' DEG	16.7
D LAT	4°30' DEG	
D LONG	35°53' DEG	

HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	
A LAT	3°86' DEG	AB	18.9 KM
A LONG	36°47' DEG	BC	4.9 KM
B LAT	3°24' DEG	CD	18.9 KM
B LONG	36°37' DEG	DA	4.6 KM
C LAT	3°28' DEG	TILT DIST	
C LONG	36°21' DEG	DIST	
D LAT	3°88' DEG		
D LONG	36°32' DEG		

S/C. ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
11.90 DEG	91.44 DEG	3.57 DEG
TILT AZIM	INCID ANG	LONGITUDE
137.19 DEG	72.34 DEG	36.34 DEG
SWING ANG	EMISS ANG	
306.43 DEG	12.26 DEG	
N DEV.	PHASE ANG	
349.89 DEG	51.00 DEG	
		-8.92 DEG
		ALPHA

MISSION /
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
LT	50°-57 KN	TILT ANG 12°-02 DEG	LATITUDE 3°-54 DEG
LT RT	0-0.0297 KM/SEC	SUN' AZIM 91°-44° DEG	LONGITUDE 36°-4.8 DEG
AT	3°-80 DEG	SWING ANG 306°-04 CEG	
DNG	36.24 DEG	N.DEV.	PHASE ANG 81°-06 DEG
			ALPHA -9°-07 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE	COORDINATE	AB
A LAT	4°12' DEG	45°
A LONG	37°22' DEG	38°7'
B LAT	2°63' DEG	40°02'
B LONG	37°02' DEG	34°57'
C LAT	2°57' DEG	34°57'
C LONG	35°79' DEG	16°45'
D LAT	4°27' DEG	34°58'
D LONG	34°58' DEG	

COORDINATE	CORNER	SIDE LENGTH
AB	A LAT	3.83 DEG
BC	B LAT	36.61 DEG
CD	B LONG	3.21 DEG
DA	C LONG	36.51 DEG
TA	D LAT	3.25 DEG
TILT DISTANCE	C LONG	36.35 DEG
29.7	D LAT	3.85 DEG
	D LONG	36.46 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION /
FRAME NO.
2027
YF-MQ.

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1	ALT ALT RT LAT LONG	KH KN/SEC 3.77 36.37	TILT ANG 12.13 TILT AZIM 136.45 SWING ANG 305.66 N.DEV*	SUN AZIM 91.44 DEG INCID ANG 72.05 DEG EMISS ANG 12.49 DEG PHASE ANG 81.06 DEG ALPHA -9.21 DEG
				LATITUDE 3.5! DEG LONGITUDE 16.62 .DFG

MEDIUM	RESOLUTION	SIDE	LE
CORNER	COORDINATE		
A	LAT 4°-C9 DEG	AB	45°
A	LONG 37°-55 DEG	BC	38°
B	LAT 2°-64 DEG	CD	40°
B	LONG 37°-16 DEG	DA	34°
C	LAT 2°-93 DEG	TILT DI	
C	LONG 35°-52 DEG		
D	LAT 4°-24 DEG		
D	LONG 36°-21 DEG		

HIGH RESOLUTION	COORDINATE	SIDE
A LAT	3.80 DEG	AH 1
A LONG	36.75 DEG	BC
B LAT	3.18 DEG	CD 1
B LONG	36.64 DEG	DA
C LAT	3.22 DEG	TILT 3
C LONG	36.49 DEG	
D LAT	3.82 DEG	
D LONG	36.60 DEG	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 12.13 DEG	SUN AZIM 91.44 DEG	LATITUDE 3.5! DEG
TILT AZIM 136.45 DEG	INCID ANG 72.06 DEG	LONGITUDE 36.62 DFG
SWING ANG 305.66 DEG	EMISS ANG 12.49 DEG	
N.DEV.* 349.88 DEG	PHASE ANG 81.06 DEG	
		ALPHA -9.21 DEG

S/C POSITION		MEDIUM RESOLUTION			
		R COORDINATE	SIDE	LE	TILT DI
1	ALT RT -0.0274 KM/S	4.-C7 DEG	AB	45°	
	LAT 3.75 DEG	37.50 DEG	BC	38°	
	LONG 36.51 DEG	2.-57 DEG	CD	40°	
		27.30 DEG	DA	34°	
		2.-92 DEG ..			17°
		4.-01 DEG			
		36.-36 DEG			

PHOTO ILLUMINATION	PRINCIPAL POINT
SUN AZIM	LATITUDE
INCID ANG	LONGITUDE
EMISS ANG	3° 49 DEG
PHASE ANG	36° 76 DEG
ALPHA	-9° 35 DEG

	HIGH RESOLUTION	SIDE LENGTH
CORNER	COORDINATE	
A LAT	3.77 DEG	AB 18.9 KM
A LONG	36.89 DEG	BC 4.9 KM
B LAT	3.16 DEG	CD 18.6 KM
B LONG	36.79 DEG	DA 4.6 KM
C LAT	3.19 DEG	TILT DISTANCE
C LONG	36.63 DEG	32.2
D LAT	3.80 DEG	
D LONG	36.74 DEG	

FINAL POINT
E 3°49' DEG
DE 36°76' DEG

PRINCIPAL POSITION	LATITUDE	LONGITUDE
44 DEG	31 DEG	51 DEG
41 DEG	31 DEG	56 DEG

PHOTO ILLUMINATI
SUN AZIM 91.4 INCID ANG 71.9
EMISS ANG 12.6 PHASE ANG 81.0

ORIENTATION
ANG 12.24 DEG
AZIM 136.99 DEG
.ANG 305.28 DEG
.ANG 349.88 DEG

S/C ORG	TILT A	TILT B	SWING	N-DEV
KM/SEC	DEG	DEG	DEG	

S/C POSITION	
ALT	50.45
AL1 RT	-0.0274
LAT	3.75
LONG	34.51

TIME
661112
DAY
1654 6-61
SEC

MISSION/
FRAME NO.
2028
YR. MD.
PR. HI.

LUNAR CRITERE PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

THE JOURNAL OF CLIMATE

MISSION
FRAME NC.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR-MO-DY	661118	ALT	12°26'0.0EG	SUN 42IM	LATITUDE 71.61 DEG
HR-MI-SEC	222312.71	ALT RT	-0.0111 KM/SEC	TILT ANG 91.57 DEG	LONGITUDE 36.31 DEG
		LAT	3.34 DEG	TILT AZIM 217.43 DEG	
		LONG	36.55 DEG	SWING ANG 126.23 DEG	
			N.DEV.	EMISS ANG 12.40 DEG	
				PHASE ANG 62.26 DEG	
				ALPHA 8.07 DEG	

HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	LENGTH
A LAT	4°15 DEG	AB 39.4 KM	AB 18.2 KM
A LONG	37.02 DEG	BC 33.9 KM	BC 4.5 KM
B LAT	2°08 DEG	CD 4.4-5 KM	CD 18.5 KM
B LONG	36.72 DEG	DA 38.0 KM	DA 4.8 KM
C LAT	2°44 DEG	TILT DISTANCE	TILT DISTANCE
C LONG	35.61 DEG	17.1	30.1
D LAT	4°50 DEG		
D LONG	35.81 DEG		

MISSIONS

S/C POSITION	S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
	TIME	X	Y	Z	TILT ANG	TILT AZIM	SUN AZIM.	LATITUDE	LONGITUDE
66111.6	49.47	KH		11.96	317.77	91.57	3.57	36.43	DEG
222314.62	ALT RT	-0.0101	KH/SEC		SWING ANG	INCID ANG	70.48	12.31	DEG
	LAT	3.32	DEG		126.56	EMISS ANG	62.31	DEG	
	LONG	36.66	DEG	N.DEV.	349.47	PHASE ANG	62.26	DEG	
						ALPHA	7.95	DEG	

MEDIUM RESOLUTION		HIGH RESOLUTION			
CORNER	COORDINATE	CORNER	COORDINATE	SIDE LENGTH	SIDE LENGTH
A LAT	4°13' DEG	AB	39.4 KM	A LAT	3°86' DEG
A LONG	37°13' DEG	BC	33.8 KM	A LONG	36°56' DEG
B LAT	2°86' DEG	CD	44.7 KM	B LAT	3°27' DEG
B LONG	36°24' DEG	DA	37.9 KM	B LONG	36°45' DEG
C LAT	3°01' DEG	TILT DISTANCE		C LAT	3°29' DEG
C LONG	25°73' DEG	16.9		C LONG	36°30' DEG
D LAT	4°48' DEG			D LAT	3°30' DEG
D LONG	35°93' DEG			D LONG	36°A1' DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
 FULL LIST ORDERED BY MISSION AND FRAME NUMBER

PAGE 117

MISSION/

FRAME NO.

2031
 YR.MO.DY
 HR.MI.SEC

TIME
 .661116
 222316.60

S/C POSITION
 ALT 49.45 KM
 ALT RT -0.0091 KM/SEC
 LAT 3.29 DEG
 LONG 36.78 DEG

S/C ORIENTATION
 TILT ANG 11.86 DEG
 TILT AZIM 318.11 DEG
 SWING ANG 126.91 DEG
 N.DEV. 349.46 DEG

PHOTO ILLUMINATION
 SUN AZIM 91.57 DEG
 INCID ANG 70.36 DEG
 EMIS ANG 12.21 DEG
 PHASE ANG 62.26 DEG

PRINCIPAL POINT
 LATITUDE 3.55 DEG
 LONGITUDE 36.55 DEG

MEDIUM RESOLUTION

MISSION/

FRAME NO.

2032
 YR.MO.DY
 HR.MI.SEC

TIME
 .661116
 222318.61

S/C POSITION
 ALT 49.43 KM
 ALT RT -0.0080 KM/SEC
 LAT 3.27 DEG
 LONG 36.90 DEG

S/C ORIENTATION
 TILT ANG 11.76 DEG
 TILT AZIM 318.48 DEG
 SWING ANG 127.27 DEG
 N.DEV. 349.45 DEG

PHOTO ILLUMINATION
 SUN AZIM 91.57 DEG
 INCID ANG 70.23 DEG
 EMIS ANG 12.10 DEG
 PHASE ANG 62.26 DEG

PRINCIPAL POINT
 LATITUDE 3.52 DEG
 LONGITUDE 36.68 DEG

HIGH RESOLUTION

MISSION/

FRAME NO.

2031
 YR.MO.DY
 HR.MI.SEC

TIME
 .661116
 222316.60

S/C POSITION
 ALT 49.45 KM
 ALT RT -0.0091 KM/SEC
 LAT 3.29 DEG
 LONG 36.78 DEG

S/C ORIENTATION
 TILT ANG 11.86 DEG
 TILT AZIM 318.11 DEG
 SWING ANG 126.91 DEG
 N.DEV. 349.46 DEG

PHOTO ILLUMINATION
 SUN AZIM 91.57 DEG
 INCID ANG 70.36 DEG
 EMIS ANG 12.21 DEG
 PHASE ANG 62.26 DEG

PRINCIPAL POINT
 LATITUDE 3.55 DEG
 LONGITUDE 36.55 DEG

HIGH RESOLUTION

MISSION/

FRAME NO.

2032
 YR.MO.DY
 HR.MI.SEC

TIME
 .661116
 222318.61

S/C POSITION
 ALT 49.43 KM
 ALT RT -0.0080 KM/SEC
 LAT 3.27 DEG
 LONG 36.90 DEG

S/C ORIENTATION
 TILT ANG 11.76 DEG
 TILT AZIM 318.48 DEG
 SWING ANG 127.27 DEG
 N.DEV. 349.45 DEG

PHOTO ILLUMINATION
 SUN AZIM 91.57 DEG
 INCID ANG 70.23 DEG
 EMIS ANG 12.10 DEG
 PHASE ANG 62.26 DEG

PRINCIPAL POINT
 LATITUDE 3.52 DEG
 LONGITUDE 36.68 DEG

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MISSION/
FRAME NO.

2034
YR. MO. DY
HR. MI. SEC
0622253.51

TIME
66119

S/C POSITION
ALT 1452.54 KM
ALT RT 0.3203 KM/SEC
LAT -9.94 DEG
LONG 172.29 DEG
N.DEV.

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -32.48 DEG	AB 403.2 KM
A LONG 148.02 DEG	BC 166.0 KM
B LAT 14.72 DEG	CD 390.7 KM
B LONG 155.05 DEG	DA 196.6 KM
C LAT 12.26 DEG	TILT DISTANCE 0.8
C LONG -164.61 DEG	
D LAT -34.95 DEG	
D LONG -163.11 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -18.96 DEG	AB 530.6 KM
A LONG 171.22 DEG	BC 133.0 KM
B LAT -1.42 DEG	CD 530.3 KM
B LONG 172.40 DEG	DA 133.7 KM
C LAT -1.67 DEG	TILT DISTANCE 5.2
C LONG 176.78 DEG	
D LAT -19.22 DEG	
D LONG 175.89 DEG	

MISSION/
FRAME NO.

2033
YR. MO. DY
HR. MI. SEC
025426.21

TIME
66119

S/C POSITION
ALT 1454.65 KM
ALT RT 0.3194 KM/SEC
LAT -9.93 DEG
LONG 174.29 DEG
N.DEV.

MEDIUM RESOLUTION

PHOTO ILLUMINATION
SUN AZIM 273.51 DEG
INCID ANG 69.82 DEG
EMISS ANG 0.91 DEG
PHASE ANG 70.19 DEG
ALPHA -0.37 DEG

HIGH RESOLUTION

PHOTO ILLUMINATION
SUN AZIM 273.51 DEG
INCID ANG 69.82 DEG
EMISS ANG 0.91 DEG
PHASE ANG 70.19 DEG
ALPHA -0.37 DEG

CORNER COORDINATE	SIDE LENGTH
A LAT -4.36 DEG	AB 705.7 KM
A LONG 169.92 DEG	BC 165.7 KM
B LAT 18.92 DEG	CD 699.7 KM
B LONG 172.84 DEG	DA 130.8 KM
C LAT 17.79 DEG	TILT DISTANCE 77.9
C LONG 178.48 DEG	
D LAT -5.08 DEG	
D LONG 174.20 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

TIME
2037
YR, MO, DY
084945,01
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	48.62 KM	TILT ANG	0.68 DEG	SUN AZIM	91.42 DEG	LATITUDE	2.59 DEG
ALT RT	0.0139 KM/SEC	TILT AZIM	108.00 DEG	INCID ANG	67.73 DEG	LONGITUDE	33.87 DEG
LAT	2.79 DEG	SWING ANG	275.92 DEG	EMISS ANG	0.70 DEG		
LONG	33.85 DEG	N.DEV.	347.92 CFG	PHASE ANG	68.41 DEG		
				ALPHA	-0.67 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION		CORNER COORDINATE		SIDE LENGTH	
A LAT	3.22 DEG	AB	39.9 KM	A LAT	2.96 DEG	AB	17.5 KM		
A LONG	34.56 DEG	BC	33.5 KM	A LONG	34.00 DEG	BC	4.4 KM		
B LAT	1.43 DEG	CD	39.5 KM	B LAT	2.39 DEG	CD	17.5 KM		
B LONG	34.28 DEG	DA	33.6 KM	B LONG	33.88 DEG	DA	4.4 KM		
C LAT	2.17 DEG	TILT DISTANCE		C LAT	2.42 DEG	TILT DISTANCE			
C LONG	33.20 DEG	0.9		C LONG	33.73 DEG	7.2			
D LAT	3.45 DEG			D LAT	2.99 DEG				
D LONG	33.47 DEG			D LONG	33.86 DEG				

MISSION/

TIME
2038
YR, MO, DY
084547,00
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	48.65 KM	TILT ANG	0.80 DEG	SUN AZIM	91.42 DEG	LATITUDE	2.66 DEG
ALT RT	0.0149 KM/SEC	TILT AZIM	107.04 DEG	INCID ANG	67.61 DEG	LONGITUDE	33.99 DEG
LAT	2.67 DEG	SWING ANG	274.95 DEG	EMISS ANG	3.82 DEG		
LONG	33.97 DEG	N.DEV.	347.92 DEG	PHASE ANG	68.40 DEG		
				ALPHA	-0.79 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION		CORNER COORDINATE		SIDE LENGTH	
A LAT	3.19 DEG	AB	40.0 KM	A LAT	2.93 DEG	AB	17.5 KM		
A LONG	24.68 DEG	BC	33.5 KM	A LONG	34.12 DEG	BC	4.4 KM		
B LAT	1.90 DEG	CD	39.6 KM	B LAT	2.37 DEG	CD	17.5 KM		
B LONG	34.41 DEG	DA	33.7 KM	B LONG	34.00 DEG	DA	4.4 KM		
C LAT	2.14 DEG	TILT DISTANCE		C LAT	2.40 DEG	TILT DISTANCE			
C LONG	33.32 DEG	1.1		C LONG	33.86 DEG	8.5			
D LAT	3.42 DEG			D LAT	2.96 DEG				
D LONG	33.59 DEG			D LONG	33.98 DEG				

LUNAR ORBITER PHOTOGRAPHIC SUPPORT DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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04/10/71

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S/C ORIENTATION	PHOT. ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
0°.92	91.41 DEG	2°.54 DEG
TILT AZIM	INCID. ANG	LONGITUDE
106°.34	67.48 DEG	34.11 DEG
SWING ANG	EMISS. ANG	
274°.25	0°.95 DEG	
N-DEVS--	PHASE ANG	
347°.91	68°.40 DEG	
- ALPHA	-90°.92 DEG	

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A	LAT 3°17 DEG	AB 43.7
A	LONG 34°21 DEG	BC 33.7
B	LAT 1°68 DEG	CD 39.5
B	LONG 34°53 DEG	DA 33.7
C	LAT 2°12 DEG	TILT DIS 1.3
C	LONG 32°44 DEG	
D	LAT 3°40 DEG	
D	LONG 33°72 DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	-2.91 DEG	AB 17.5 KM
A LONG	34.-24 DEG	BC 4.4 KM
B LAT	2.34 DEG	CD 17.5 KM
B LONG	34.12 DEG	DA 4.4 KM
C LAT	2.-37 DEG	TIKT DISTAN
C LONG	33.98 DEG	9.8
D LAT	2.-94 DEG	
D LONG	34.10 DEG	

MISSION /

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 1.04 TILT AZIM 105.81 SWING ANG 273.71	SUN AZIM 91.41 DEG INCID ANG 67.36 DEG EMISS ANG 1.07 DEG	LATITUDE 2.61 DEG LONGITUDE 34.23 DEG

MEDIUM RESOLUTION		SIDE LENGTH	
CORNER	COORDINATE		
A LAT	3.15 DEG	AB	4D.1 KM
A LONG	24.93 DEG	BC	33.7 KM
B LAT	1°E5 DEG	CD	39.5 KM
B LONG	34.65 DEG	DA	33.7 KM
C LAT	2°E9 DEG	TIKT DISTANT	
C LONG	23.57 DEG		1.5
D LAT	2°-37 DEG		
D LONG	23.57 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

2041
YR.MD.DY
HR.MI.SEC
084552.92

S/C POSITION
ALT 48.75 KM
ALT RT 0.0180 KM/SEC
LAT 2.60 DEG
LONG 34.32 DEG

S/C ORIENTATION
TILT ANG 1.16 DEG
TILT AZIM 105.38 DEG
SWING ANG 273.28 DEG
N.DEV. 347.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.41 DEG
INCID ANG 67.24 DEG
EMIS ANG 1.20 DEG
PHASE ANG 68.40 DEG
ALPHA -1.16 DEG

MISSION/

2042

TIME
66115
084554.89

S/C POSITION
ALT 48.79 KM
ALT RT 0.0190 KM/SEC
LAT 2.57 DEG
LONG 34.44 DEG

S/C ORIENTATION
TILT ANG 1.28 DEG
TILT AZIM 105.04 DEG
SWING ANG 272.94 DEG
N.DEV. 347.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.40 DEG
INCID ANG 67.12 DEG
EMIS ANG 1.32 DEG
PHASE ANG 68.40 DEG
ALPHA -1.28 DEG

MISSION/

2042

TIME
66119
084554.89

S/C POSITION
ALT 48.79 KM
ALT RT 0.0190 KM/SEC
LAT 2.57 DEG
LONG 34.44 DEG

S/C ORIENTATION
TILT ANG 1.28 DEG
TILT AZIM 105.04 DEG
SWING ANG 272.94 DEG
N.DEV. 347.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.40 DEG
INCID ANG 67.12 DEG
EMIS ANG 1.32 DEG
PHASE ANG 68.40 DEG
ALPHA -1.28 DEG

MISSION/

2042

TIME
66119
084554.89

S/C POSITION
ALT 48.79 KM
ALT RT 0.0190 KM/SEC
LAT 2.57 DEG
LONG 34.44 DEG

S/C ORIENTATION
TILT ANG 1.28 DEG
TILT AZIM 105.04 DEG
SWING ANG 272.94 DEG
N.DEV. 347.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.40 DEG
INCID ANG 67.12 DEG
EMIS ANG 1.32 DEG
PHASE ANG 68.40 DEG
ALPHA -1.28 DEG

MISSION/

2042

TIME
66119
084554.89

S/C POSITION
ALT 48.79 KM
ALT RT 0.0190 KM/SEC
LAT 2.57 DEG
LONG 34.44 DEG

S/C ORIENTATION
TILT ANG 1.28 DEG
TILT AZIM 105.04 DEG
SWING ANG 272.94 DEG
N.DEV. 347.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.40 DEG
INCID ANG 67.12 DEG
EMIS ANG 1.32 DEG
PHASE ANG 68.40 DEG
ALPHA -1.28 DEG

MISSION/

2042

TIME
66119
084554.89

S/C POSITION
ALT 48.79 KM
ALT RT 0.0190 KM/SEC
LAT 2.57 DEG
LONG 34.44 DEG

S/C ORIENTATION
TILT ANG 1.28 DEG
TILT AZIM 105.04 DEG
SWING ANG 272.94 DEG
N.DEV. 347.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.40 DEG
INCID ANG 67.12 DEG
EMIS ANG 1.32 DEG
PHASE ANG 68.40 DEG
ALPHA -1.28 DEG

MISSION/

2042

TIME
66119
084554.89

S/C POSITION
ALT 48.79 KM
ALT RT 0.0190 KM/SEC
LAT 2.57 DEG
LONG 34.44 DEG

S/C ORIENTATION
TILT ANG 1.28 DEG
TILT AZIM 105.04 DEG
SWING ANG 272.94 DEG
N.DEV. 347.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.40 DEG
INCID ANG 67.12 DEG
EMIS ANG 1.32 DEG
PHASE ANG 68.40 DEG
ALPHA -1.28 DEG

MISSION/

2042

TIME
66119
084554.89

S/C POSITION
ALT 48.79 KM
ALT RT 0.0190 KM/SEC
LAT 2.57 DEG
LONG 34.44 DEG

S/C ORIENTATION
TILT ANG 1.28 DEG
TILT AZIM 105.04 DEG
SWING ANG 272.94 DEG
N.DEV. 347.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.40 DEG
INCID ANG 67.12 DEG
EMIS ANG 1.32 DEG
PHASE ANG 68.40 DEG
ALPHA -1.28 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT		
YR.	MO.	DAY	HR.	MIN.	SEC	SUN AZIM	LATITUDE	LONGITUDE
2042	61	119	154	422	.2C	91°.34 DEG	4°.54 DEG	20°.83 DEG
			ALT	45.85	KM	TILT ANG 1°.41 DEG	INCID ANG 77.22 DEG	
			ALT RT	-0.6652	KM/SEC	TILT AZIM 285.52 DEG	EMISS ANG 1°.46 DEG	
			LAT	2.53	DEG	SWING ANG 94°.37 DEG	PHASE ANG 75.61 DEG	
			LONG	21.93	DEG	N.DEV. 348.56 DEG	ALPHA 1.41 DEG	
MEDIUM RESOLUTION								
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION		CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT	E.CB DEG	AB 4.04 KM	A LAT	4.81 DEG	AB 17.9 KM		A LAT	4.81 DEG
A LONG	21°.59 DEG	AC 34.4 KM	A LONG	21°.03 DEG	BC 4.5 KM		B LAT	4.23 DEG
B LAT	3°.77 DEG	CD 41.1 KM	B LONG	20°.91 DEG	CD 18.0 KM		B LONG	4.23 DEG
B LONG	21°.32 DEG	DA 34.6 KM	C LAT	4.26 DEG	DA 4.5 KM		C LAT	4.26 DEG
C LAT	3°.59 DEG	TILT DISTANCE 1.9	C LONG	20°.76 DEG	TILT DISTANCE 15.0		D LAT	4.34 DEG
C LONG	22°.23 DEG		D LONG	20°.88 DEG			D LONG	4.34 DEG
D LAT	5°.32 DEG							
D LONG	22°.47 DEG							
MISSION/ FRAME NO.								
2044	61	115	154	424	.34	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
			ALT	49.74	KM	TILT ANG 1°.28 DEG	SUN AZIM 91°.35 DEG	LATITUDE 4°.51 DEG
			ALT RT	-0.6641	KM/SEC	TILT AZIM 285.97 DEG	INCID ANG 77.09 DEG	LONGITUDE 21°.03 DEG
			LAT	0.50	DEG	SWING ANG 94.51 DEG	EMISS ANG 1°.32 DEG	
			LONG	21.05	DEG	N.DEV. 348.55 DEG	PHASE ANG 75.81 DEG	
						ALPHA 1.28 DEG		
MEDIUM RESOLUTION								
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION		CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT	E.35 DEG	AB 40.3 KM	A LAT	4.79 DEG	AB 17.9 KM		A LAT	4.79 DEG
A LONG	21°.72 DEG	BC 34.3 KM	A LONG	21°.16 DEG	BC 4.5 KM		B LAT	4.21 DEG
B LAT	2°.75 DEG	CD 41.1 KM	B LONG	21°.94 DEG	CD 17.9 KM		B LONG	4.24 DEG
B LONG	21°.46 DEG	DA 34.5 KM	C LAT	4.24 DEG	TILT DISTANCE 13.6		C LONG	20°.89 DEG
C LAT	3°.56 DEG	TILT DISTANCE 1.7	D LAT	4.82 DEG			D LONG	21.01 DEG
C LONG	22°.34 DEG							
D LAT	5°.29 DEG							
D LONG	20.61 DEG							

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

2045

TIME
YR. MO. DY
HR. MI. SECS/C POSITION
ALT RT -0.630 KM/SEC
LAT 4.48 DEG
LONG 21.19 DEG
N.DEV.TILT ANG 1.15 DEG
TILT AZIM 286.63 DEG
SWING ANG 95.05 DEG
PHASE ANG 75.81 DEG
ALPHA 1.14 DEGPHOTO ILLUMINATION
SUN AZIM 91.35 DEG
INCID ANG 73.96 DEG
EMISS ANG 1.19 DEGPRINCIPAL POINT
LATITUDE 4.49 DEG
LONGITUDE 21.16 DEG

MISSION/

2045

TIME
YR. MO. DY
HR. MI. SECS/C POSITION
ALT RT -0.630 KM/SEC
LAT 4.48 DEG
LONG 21.19 DEG
N.DEV.TILT ANG 1.15 DEG
TILT AZIM 286.63 DEG
SWING ANG 95.05 DEG
PHASE ANG 75.81 DEG
ALPHA 1.14 DEGPHOTO ILLUMINATION
SUN AZIM 91.35 DEG
INCID ANG 73.96 DEG
EMISS ANG 1.19 DEGPRINCIPAL POINT
LATITUDE 4.49 DEG
LONGITUDE 21.16 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 5.42 DEG AB 4.03 KM
A LONG 21.85 DEG BC 34.3 KM
B LAT 3.73 DEG CD 40.8 KM
B LONG 21.59 DEG DA 34.4 KM
C LAT 3.54 DEG TILT DISTANCE 1.5
C LONG 21.48 DEG D LAT 2.26 DEG 12.2
D LAT 20.74 DEG D LONG 21.15 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 4.76 DEG AB 17.8 KM
A LONG 21.29 DEG BC 4.5 KM
B LAT 4.18 DEG CD 17.9 KM
B LONG 21.17 DEG DA 4.5 KM
C LAT 4.21 DEG TILT DISTANCE 12.2
C LONG 21.03 DEG D LAT 4.79 DEG
D LONG 21.15 DEG ALPHA 1.01 DEG

MISSION/

2045

TIME
YR. MO. DY
HR. MI. SECS/C POSITION
ALT RT -0.631 KM/SEC
LAT 4.45 DEG
LONG 21.32 DEG
N.DEV.TILT ANG 1.02 DEG
TILT AZIM 287.22 DEG
SWING ANG 95.74 DEG
PHASE ANG 75.53 DEGPHOTO ILLUMINATION
SUN AZIM 91.36 DEG
INCID ANG 76.82 DEG
EMISS ANG 1.05 DEGPRINCIPAL POINT
LATITUDE 4.46 DEG
LONGITUDE 21.29 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 5.00 DEG AB 4.02 KM
A LONG 21.59 DEG BC 34.2 KM
B LAT 3.70 DEG CD 46.7 KM
B LONG 21.72 DEG DA 34.3 KM
C LAT 3.52 DEG TILT DISTANCE 1.4
C LONG 20.61 DEG D LAT 5.22 DEG 10.8
D LONG 20.88 DEG D LONG 21.26 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 4.73 DEG AB 17.8 KM
A LONG 21.42 DEG BC 4.5 KM
B LAT 4.16 DEG CD 17.9 KM
B LONG 21.31 DEG DA 4.5 KM
C LAT 4.19 DEG TILT DISTANCE 10.8
C LONG 21.16 DEG D LAT 4.76 DEG
D LONG 21.26 DEG ALPHA 1.01 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSIONS

NAME NO.
2047 YR. MO.
HR. MI.

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
66111S 154430+75	ALT RT -0.0608 KH/SEC LAT 4.43 DEG LONG 21.45 DEG	ALT 49.34 KH TILT ANG 0.89 DEG TILT AZIM 288.11 DEG SWING ANG 96.02 DEG N.DEV 3498.51 DEG	SUN AZIM 91.36 DEG INCID ANG 76.59 DEG MISS ANG 0.92 DEG PHASE ANG 75.81 DEG	LATITUDE 4.43 DEG LONGITUDE 21.42 DEG
				ALPHA 0.88 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	4° 57' DEG	AB 40.1 KM
A LONG	22° 41' DEG	BC 34.1 KM
A LONG	23° 08' DEG	CD 40.5 KM
B LAT	3° 48' DEG	DA 34.2 KM
B LONG	21° 85' DEG	TILT DISTANCE
C LAT	3° 89' DEG	1.2
C LONG	20° 75' DEG	
D LAT	5° 20' DEG	
D LONG	21° 01' DEG	

HIGH RESOLUTI	
CORNER	COORDINATE
A LAT	4° 7.1 DEG
A LONG	21° 56 DEG
B LAT	4° 13 DEG
B LONG	21° 44 DEG
C LAT	4° 16 DEG
C LONG	21° 29 DEG
D LAT	4° 73 DEG
D LONG	21° 41 DEG

LENGTH	17.7 KM
	4.5 KM
	17.8 KM
	4.5 KM
DISTANCE	9.4

MISSION /
FRAME NO.

YR-MO-DY	TIME	S/C POSITION	ALT	KM	TILT ANG	0.76°
1970-01-01 15432.8E	661119	ALT RT	49.22	KM	TILT AZIM	289.30°
		LAT	-0.0597	KM/SEC	SWING ANG	97.80°

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	4° 54' DEG	AB 40.0 KM
A LONG	22° 25' DEG	BC 34.0 KM
B LAT	3° 65' DEG	CD 40.4 KM
B LONG	21° 58' DEG	DA 34.1 KM
C LAT	3° 87' DEG	TILT DISTANCE 1.0
C LONG	20° 88' DEG	
D LAT	5° 18' DEG	
D LONG	21° 14' DEG	

HIGH RESOLUTI	
CORNER	COORDINATE
A LAT	4.68 DEG
A LONG	21.69 DEG
B LAT	4.11 DEG
B LONG	21.57 DEG
C LAT	4.14 DEG
C LONG	21.43 DEG
D LAT	4.71 DEG
D LONG	21.54 DEG

LENGTH	DISTANCE
17.7 KM	
4.4 KM	
17.7 KM	
4.5 KM	
6.1	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.2049
YR. MO. DY
HR. MI. SEC
661119
154435.00

S/C POSITION
 ALT 49.09 KM
 ALT RT -0.0586 KM/SEC
 LAT 4.37 DEG
 LONG 21.70 DEG
 N.DEV. 348.49 DEG
 N.EMIS. 0.61 DEG

MISSION/
FRAME NO.2050
YR. MO. DY
HR. MI. SEC
661119
154437.12

S/C POSITION
 ALT 48.97 KM
 ALT RT -0.0575 KM/SEC
 LAT 4.35 DEG
 LONG 21.83 DEG
 N.DEV. 348.48 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 4.92 DEG AB 40.3 KM
 A LONG 22.38 DEG BC 33.9 KM
 B LAT 3.63 DEG CD 40.3 KM
 B LONG 22.11 DEG DA 34.0 KM
 C LAT 3.84 DEG TILT DISTANCE
 C LONG 21.01 DEG 0.8
 D LAT 5.15 DEG
 D LONG 21.28 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 4.65 DEG AB 17.6 KM
 A LONG 21.82 DEG BC 4.4 KM
 B LAT 4.08 DEG CD 17.7 KM
 B LONG 21.70 DEG DA 4.4 KM
 C LAT 4.11 DEG TILT DISTANCE
 C LONG 21.56 DEG 6.7
 D LAT 4.68 DEG
 D LONG 21.67 DEG

MISSION/
FRAME NO.2050
YR. MO. DY
HR. MI. SEC
661119
154437.12

S/C ORIENTATION
 TILT ANG 0.51 DEG
 TILT AZIM 293.48 DEG
 SWING ANG 10.96 DEG
 N.DEV. 348.48 DEG

PHOTO ILLUMINATION
 SUN AZIM 91.37 DEG
 INCID ANG 76.43 DEG
 EMIS ANG 0.65 DEG
 PHASE ANG 75.81 DEG
 ALPHA 0.61 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 4.62 DEG AB 17.6 KM
 A LONG 21.95 DEG BC 4.4 KM
 B LAT 4.06 DEG CD 17.6 KM
 B LONG 21.83 DEG DA 4.4 KM
 C LAT 4.08 DEG TILT DISTANCE
 C LONG 21.69 DEG 5.3
 D LAT 4.65 DEG
 D LONG 21.81 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

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MISSION/

FRAME NO.

2051

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 47.96 KM	TILT ANG 0.91 DEG	SUN AZIM 91.39 DEG	LATITUDE 4.19 DEG
ALT RT -0.0510 KM/SEC	TIILT-AZIM 297.63 DEG	INCID ANG 75.52 DEG	LONGITUDE 20.72 DEG	
LAT 4.18 DEG	SWING ANG 106.12 DEG	EMISS ANG 0.94 DEG		
LONG -20.75 DEG	N.DEV. 348.50 DEG	PHASE ANG 74.78 DEG		
		ALPHA 0.84 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.72 DEG	AB 39.0 KM
A LONG 21.40 DEG	BC 33.1 KM
B LAT 3.46 DEG	CD 39.4 KM
B LONG 21.14 DEG	DA 33.2 KM
C LAT 3.67 DEG	TIILT DISTANCE 1.2
C LONG 20.06 DEG	
D LAT 4.54 DEG	
D LONG 20.32 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.46 DEG	AB 17.2 KM
A LONG 23.85 DEG	BC 4.3 KM
B LAT 3.90 DEG	CD 17.3 KM
B LONG 20.74 DEG	DA 4.3 KM
C LAT 3.93 DEG	TIILT DISTANCE 9.7
C LONG 20.60 DEG	
D LAT 4.49 DEG	
D LONG 20.71 DEG	

MISSION/

FRAME NO.

2052

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 47.85 KM	TILT ANG 0.79 DEG	SUN AZIM 91.39 DEG	LATITUDE 4.17 DEG
ALT RT -0.0499 KM/SEC	TIILT-AZIM 300.20 DEG	INCID ANG 75.50 DEG	LONGITUDE 20.65 DEG	
LAT 4.16 DEG	SWING ANG 108.69 DEG	EMISS ANG 0.81 DEG		
LONG 20.87 DEG	N.DEV. 348.49 DEG	PHASE ANG 74.78 DEG		
		ALPHA 0.471 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.69 DEG	AB 38.9 KM
A LONG 21.52 DEG	BC 33.0 KM
B LAT 3.43 DEG	CD 39.3 KM
B LONG 21.26 DEG	DA 33.2 KM
C LAT 3.65 DEG .. TIILT DISTANCE 1.1	
C LONG 20.19 DEG	
D LAT 4.92 DEG	
D LONG 20.45 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.43 DEG	AB 17.2 KM
A LONG 20.98 DEG	BC 4.3 KM
B LAT 3.88 DEG	CD 17.2 KM
B LONG 20.86 DEG	DA 4.3 KM
C LAT 3.90 DEG	TIILT DISTANCE 8.4
C LONG 20.72 DEG	
D LAT 4.46 DEG	
D LONG 20.84 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.2054
YR-MD-DY
HR,MI,SEC

TIME : 661119
 S/C POSITION ALT 47.76 KM
 ALT RT -0.0489 KM/SEC
 LAT 4.13 DEG
 LONG 20.99 DEG

N.DEV. 348.48 DEG
 ALPHA 0.58 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.67 DEG	AB 38.9 KM
A LONG 21.65 DEG	BC 32.9 KM
B LAT 3.41 DEG	CD 39.2 KM
B LONG 21.39 DEG	DA 33.1 KM
C LAT 3.62 DEG	TILT DISTANCE 0.9
C LONG 20.32 DEG	
D LAT 4.89 DEG	
D LONG 20.58. DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.41 DEG	AB 17.2 KM
A LONG 21.10 DEG	BC 4.3 KM
B LAT 3.85 DEG	CD 17.2 KM
B LONG. 20.99 DEG	DA 4.3 KM
C LAT 3.88 DEG	TILT DISTANCE .7.1
C LONG 20.85 DEG	
D LAT 4.44 DEG	
D LONG 20.96 DEG	

MISSION/
FRAME NO.661119
191330-84

TIME :
 S/C POSITION ALT 47.66 KM
 ALT RT -0.0478 KM/SEC
 LAT 4.11 DEG
 LONG 21.12 DEG

N.DEV. 348.47 DEG
 ALPHA 0.46 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.41 DEG	AB 17.2 KM
A LONG 21.10 DEG	BC 4.3 KM
B LAT 3.85 DEG	CD 17.2 KM
B LONG. 20.99 DEG	DA 4.3 KM
C LAT 3.88 DEG	TILT DISTANCE .7.1
C LONG 20.85 DEG	
D LAT 4.44 DEG	
D LONG 20.96 DEG	

PHOTO ILLUMINATION
 SUN AZIM 91.40 DEG
 INCID ANG 75.37 DEG
 EMISS ANG 3.69 DEG
 PHASE ANG 74.78 DEG
 ALPHA 0.58 DEG

PRINCIPAL POINT
 LATITUDE 4.14 DEG
 LONGITUDE 20.98 DFG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.38 DEG	AB 17.1 KM
A LONG 21.23 DEG	BC 4.3 KM
B LAT 3.83 DEG	CD 17.1 KM
B LONG 21.12 DEG	DA 4.3 KM
C LAT 3.86 DEG	TILT DISTANCE .5.9
C LONG 20.98 DEG	
D LAT 4.41 DEG	
D LONG 21.09 DEG	

PHOTO ILLUMINATION
 SUN AZIM 91.40 DEG
 INCID ANG 75.24 DEG
 EMISS ANG 10.57 DEG
 PHASE ANG 74.78 DEG
 ALPHA 0.46 DEG

PRINCIPAL POINT
 LATITUDE 4.12 DEG
 LONGITUDE 21.11 DFG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

PAGE 130

MISSION/

FRAME NO.
2057
YR.MD.DY
HR.MI.SEC

TIME
661119
191337.04

S/C POSITION
ALT 47.37 KM
ALT RT -0.0446 KM/SEC
LAT 4.03 DEG
LONG 21.49 DEG
N.DEV. 348.44 DEG
N.DEV. 0.5

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.46 DEG	AB 38.7 KM
A LONG 22.16 DEG	BC 32.6 KM
B LAT 3.31 DEG	CD 38.7 KM
B LONG 21.90 DEG	DA 32.8 KM
C LAT 3.53 DEG	TILT DISTANCE 0.5
C LONG 20.14 DEG	
D LAT 4.78 DEG	
D LONG 21.10 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.30 DEG	AB 17.0 KM
A LONG 21.62 DEG	BC 4.3 KM
B LAT 3.75 DEG	CD 17.0 KM
B LONG 21.50 DEG	DA 4.3 KM
C LAT 3.78 DEG	TILT DISTANCE 2.9
C LONG 21.36 DEG	
D LAT 4.33 DEG	
D LONG 21.48 DEG	

MISSION/

FRAME NO.
2058
YR.MD.DY
HR.MI.SEC

TIME
661119
191339.11

S/C POSITION
ALT 47.28 KM
ALT RT -0.0435 KM/SEC
LAT 4.01 DEG
LONG 21.62 DEG
N.DEV. 348.43 DEG
N.DEV. 0.5

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.53 DEG	AB 38.6 KM
A LONG 22.29 DEG	BC 32.6 KM
B LAT 3.29 DEG	CD 38.6 KM
B LONG 22.03 DEG	DA 32.8 KM
C LAT 3.50 DEG	TILT DISTANCE 0.5
C LONG 20.57 DEG	
D LAT 4.75 DEG	
D LONG 21.23 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.28 DEG	AB 17.0 KM
A LONG 21.74 DEG	BC 4.3 KM
B LAT 3.73 DEG	CD 17.0 KM
B LONG 21.63 DEG	DA 4.3 KM
C LAT 3.75 DEG	TILT DISTANCE 2.7
C LONG 21.49 DEG	
D LAT 4.30 DEG	
D LONG 21.61 DEG	

PHOTO ILLUMINATION
SUN AZIM. 91.41 DEG
INCID ANG 74.86 DEG
EMIS ANG 0.29 DEG
PHASE ANG 74.78 DEG
ALPHA 0.07 DEG

PHOTO ILLUMINATION
SUN AZIM. 91.41 DEG
INCID ANG 74.73 DEG
EMIS ANG 0.26 DEG
PHASE ANG 74.78 DEG
ALPHA -0.06 DEG

PHOTO ILLUMINATION
SUN AZIM. 91.41 DEG
INCID ANG 74.73 DEG
EMIS ANG 0.26 DEG
PHASE ANG 74.78 DEG
ALPHA -0.06 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
FULL LIST ORDERED BY MISSION AND FRAME NUMBER

PAGE 131

MISSION/
FRAME NO.
2059

TIME
661119
YR. MO. DY
2241:59.33

S/C POSITION
ALT 51.16 KM
ALT RT -0.0819 KMS/SEC
LAT 4.89 DEG
LONG 15.26 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 1.45 DEG
TILT AZIM 287.93 DEG
SWING ANG 96.77 DEG
N.DEV. 348.85 DEG

PHOTO ILLUMINATION
SUN AZIM 91.23 DEG
INCID ANG 79.37 DEG
EMISS ANG 1.49 DEG
PHASE ANG 77.94 DEG
ALPHA 1.43 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 5.46 DEG AB 41.5 KM
A LONG 15.54 DEG BC 35.3 KM
B LAT 4.12 DEG CD 42.2 KM
B LONG 15.67 DEG DA 35.5 KM
C LAT 4.33 DEG TILT DISTANCE 2.3
C LONG 14.52 DEG
D LAT 5.70 DEG
D LONG 14.78 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 5.18 DEG AB 18.4 KM
A LONG 15.36 DEG BC 4.6 KM
B LAT 4.59 DEG CD 18.4 KM
B LONG 15.24 DEG DA 4.6 KM
C LAT 4.62 DEG TILT DISTANCE
C LONG 15.09 DEG
D LAT 5.21 DEG
D LONG 15.21 DEG

MISSION/
FRAME NO.
2060

TIME
661119
YR. MO. DY
2241 1.51

S/C POSITION
ALT 50.99 KM
ALT RT -0.0808 KMS/SEC
LAT 4.86 DEG
LONG 15.40 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 288.63 DEG
SWING ANG 97.47 DEG
N.DEV. 348.84 DEG

PHOTO ILLUMINATION
SUN AZIM 91.24 DEG
INCID ANG 79.24 DEG
EMISS ANG 1.36 DEG
PHASE ANG 77.94 DEG
ALPHA 1.29 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 5.43 DEG AB 41.3 KM
A LONG 16.07 DEG BC 35.2 KM
B LAT 4.09 DEG CD 42.0 KM
B LONG 15.80 DEG DA 35.3 KM
C LAT 4.31 DEG TILT DISTANCE 1.8
C LONG 14.66 DEG
D LAT 5.67 DEG
D LONG 14.92 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 5.15 DEG AB 18.3 KM
A LONG 15.49 DEG BC 4.6 KM
B LAT 4.56 DEG CD 18.4 KM
B LONG 15.37 DEG DA 4.6 KM
C LAT 4.59 DEG TILT DISTANCE
C LONG 15.22 DEG
D LAT 5.18 DEG
D LONG 15.34 DEG

MISSION/
FRAME NO.
2061

TIME
661119
YR. MO. DY
2241 1.51

S/C POSITION
ALT 50.99 KM
ALT RT -0.0808 KMS/SEC
LAT 4.86 DEG
LONG 15.40 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 288.63 DEG
SWING ANG 97.47 DEG
N.DEV. 348.84 DEG

PHOTO ILLUMINATION
SUN AZIM 91.24 DEG
INCID ANG 79.24 DEG
EMISS ANG 1.36 DEG
PHASE ANG 77.94 DEG
ALPHA 1.29 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION STATEMENT

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71 PAGE 132

LINE NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1	YR, MO, DY HR, MI, SEC	66119 2241 3.67	ALT 50.81 ALT RT -0.0797 LAT 4.83 LONG 15.53	TILT ANG 1.19 TILT AZIM 289.48 SWING ANG 98.31 N.DEV. 348.83	SUN AZIM 91.25 DEG INCID ANG 79.10 DEG EMISS ANG 1.22 DEG PHASE ANG 77.94 DEG ALPHA 1.16 DEG
					HIGH RESOLUTION
			CORNER COORDINATE	CORNER COORDINATE	SIDE LENGTH
			A LAT 5.40 DEG	A LAT 5.13 DEG	AB 18.3 KM
			A LONG 16.20 DEG	A LONG 15.53 DEG	BC 4.6 KM
			B LAT 4.07 DEG	B LAT 4.54 DEG	CD 18.3 KM
			B LONG 15.93 DEG	B LONG 15.51 DEG	DA 4.6 KM
			C LAT 4.29 DEG	C LAT 4.57 DEG	TILT DISTANCE
			C LONG 14.75 DEG	C LONG 15.36 DEG	12.6
			D LAT 5.64 DEG	D LAT 5.16 DEG	
			D LONG 15.06 DEG	D LONG 15.48 DEG	

MISSIONS

TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
	ALT	KH	TILT ANG	DEG	SUN AZIM	91.26 DEG	LATITUDE	4.82 DEG
661119	50.64	KH	1.06	DEG	INCID ANG	78.97 DEG	LONGITUDE	15.63 DEG
22241 5.83	-0.786	KH/SEC	290.54	DEG	EMISS ANG	1.09 DEG		
	ALT		SWING ANG	99.36	DEG	PHASE ANG	77.94 DEG	
	4.81	DEG	N.DEV.	348.82	DEG	ALPHA	1.03 DEG	
	LONG	15.66						

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	5.38 DEG	AB	41.1 KM
A LONG	16.33 DEG	BC	34.9 KM
B LAT	4.05 DEG	CD	41.6 KM
B LONG	16.07 DEG	DA	35.1 KM
C LAT	4.26 DEG	TILT DISTANCE	
C LONG	14.93 DEG	1.4	
D LAT	5.61 DEG		
D LONG	16.20 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

PAGE : 33

MISSION/
FRAME NO.
2063

TIME
661119
YR.MD.DY
22417.98
HR.MI.SEC

S/C POSITION
ALT 50.48 KM
ALT RT -0.0775 KM/SEC
LAT 4.78 DEG
LONG 15.78 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT AZIM 291.89 DEG
SWING ANG 100.69 DEG
N.DEV. 348.81 DEG

PHOTO ILLUMINATION
SUN AZIM 91.26 DEG
INCID ANG 78.64 DEG
EMISS ANG 0.55 DEG
PHASE ANG 77.94 DEG

PRINCIPAL POINT
LATITUDE 4.79 DEG
LONGITUDE 15.76 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.35 DEG	AB 41.0 KM
A LONG 16.47 DEG	BC 34.8 KM
B LAT 4.02 DEG	CD 41.5 KM
B LONG 16.20 DEG	DA 35.3 KM
C LAT 4.24 DEG	TILT DISTANCE 1.2
C LONG 15.07 DEG	
D LAT 5.58 DEG	
D LONG 15.33 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 5.07 DEG	AB 1.81 KM
A LONG 15.89 DEG	BC 4.6 KM
B LAT 4.49 DEG	CD 1.82 KM
B LONG 15.78 DEG	DA 4.6 KM
C LAT 4.51 DEG	TILT DISTANCE 9.8
C LONG 15.63 DEG	
D LAT 5.10 DEG	
D LONG 15.74 DEG	

MISSION/
FRAME NO.
2064

TIME
661115
YR.MD.DY
224110.12
HR.MI.SEC

S/C POSITION
ALT 50.31 KM
ALT RT -0.0764 KM/SEC
LAT 4.76 DEG
LONG 15.91 DEG

S/C ORIENTATION
TILT ANG 0.80 DEG
TILT AZIM 293.66 DEG
SWING ANG 102.46 DEG
N.DEV. 348.80 DEG

PHOTO ILLUMINATION
SUN AZIM 91.27 DEG
INCID ANG 78.70 DEG
EMISS ANG 0.62 DEG
PHASE ANG 77.94 DEG

PRINCIPAL POINT
LATITUDE 4.77 DEG
LONGITUDE 15.89 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 5.32 DEG	AB 40.9 KM
A LONG 16.60 DEG	BC 34.7 KM
B LAT 4.30 DEG	CD 41.3 KM
B LONG 16.33 DEG	DA 34.9 KM
C LAT 4.21 DEG	TILT DISTANCE 1.1
C LONG 15.20 DEG	
D LAT 5.55 DEG	
D LONG 15.47 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 5.05 DEG	AB 1.81 KM
A LONG 16.02 DEG	BC 4.5 KM
B LAT 4.46 DEG	CD 1.81 KM
B LONG 15.91 DEG	DA 4.6 KM
C LAT 4.49 DEG	TILT DISTANCE 8.4
C LONG 15.76 DEG	
D LAT 5.08 DEG	
D LONG 15.88 DEG	

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MISSION /

FRAME NO.

TIME

YR • MO • DY

HR • MI • SEC

S/C POSITION
 ALT 50°15' KM
 ALT RT -0.0753 KM/SEC
 LAT 4°73' DEG
 LONG 16°04' DEG
 N.DEV. 348°78' DEG

S/C ORIENTATION
 TILT ANG 0°67' DEG
 TILT AZIM 295°11' DEG
 SWING ANG 104°89' DEG

PHOTO ILLUMINATION

SUN AZIM 91°27' DEG
 INCID ANG 78°57' DEG
 EMISS ANG 0°69' DEG
 PHASE ANG 77°94' DEG
 ALPHA 0°63' DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	5°29' DEG	AB 4.0' KM
A LONG	16°73' DEG	BC 34.6' KM
B LAT	3°57' DEG	CD 41.1' KM
B LONG	16°46' DEG	DA 34.7' KM
C LAT	4°19' DEG	TILT DISTANCE 0.9
C LONG	15°34' DEG	
D LAT	5°52' DEG	
D LONG	15°50' DEG	

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 5°02' DEG AB 18.0' KM

A LONG 16°16' DEG BC 4.5' KM

B LAT 4°44' DEG CD 18.0' KM

B LONG 16°04' DEG DA 4.5' KM

C LAT 4°46' DEG TILT DISTANCE 7.1

C LONG 15°89' DEG

D LAT 5°05' DEG

D LONG 16.01' DEG

PHOTO ILLUMINATION

SUN AZIM 91°28' DEG
 INCID ANG 78°44' DEG
 EMISS ANG 0°56' DEG
 PHASE ANG 77°94' DEG
 ALPHA 0°49' DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	5°27' DEG	AB 40.7' KM
A LONG	16°86' DEG	BC 34.5' KM
B LAT	3°55' DEG	CD 41.0' KM
B LONG	16°59' DEG	DA 34.6' KM
C LAT	4°17' DEG	TILT DISTANCE 0.7
C LONG	15°47' DEG	
D LAT	5°49' DEG	
D LONG	15°74' DEG	

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 4°99' DEG AB 18.0' KM

A LONG 16.29' DEG BC 4.5' KM

B LAT 4°41' DEG CD 18.0' KM

B LONG 16.17' DEG DA 4.5' KM

C LAT 4°44' DEG TILT DISTANCE 5.8

C LONG 16.03' DEG

D LAT 5°02' DEG

D LONG 16.14' DEG

MISSION /

FRAME NO.

TIME

YR • MO • DY

HR • MI • SEC

S/C POSITION
 ALT 49.99' KM
 ALT RT -0.0742 KM/SEC
 LAT 4°71' DEG
 LONG 16°17' DEG
 N.DEV. 348°77' DEG

S/C ORIENTATION
 TILT ANG 0°55' DEG
 TILT AZIM 299°65' DEG
 SWING ANG 108°42' DEG

PHOTO ILLUMINATION

SUN AZIM 91°28' DEG
 INCID ANG 78°44' DEG
 EMISS ANG 0°56' DEG
 PHASE ANG 77°94' DEG
 ALPHA 0°49' DEG

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MISSION / FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2057	661:21	ALT 45.52 KM ALT RT. 0.0121 KM/SEC	TILT ANG 3.41 DEG TILT AZIM 16.78 DEG SWING ANG 184.73 DEG N.DEV. 347.92 DEG	SUN AZIM 91.42 DEG INCID ANG 68.41 DEG EMISS ANG 3.50 DEG PHASE ANG 69.37 DEG ALPHA -1.00 DEG	LATITUDE 2.75 DEG LONGITUDE 24.38 DEG
YR. MO. DY	021235.61	LAT 2.66 DEG LONG 24.35 DFG			
FR. MI. SEC					

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 3.26 DEG	AB 37.4 KM	A LAT 3.00 DEG	AB 1.64 KM
A LONG 25.04 DEG	BC 30.7 KM	A LONG 24.50 DEG	BC 4.1 KM
B LAT 2.05 DEG	CD 37.3 KM	B LAT 2.47 DEG	CD 1.64 KM
B LONG 24.76 DEG	DA 32.4 KM	B LONG 24.39 DEG	DA 4.2 KM
C LAT 2.27 DEG	TILT DISTANCE 4.9	C LAT 2.50 DEG	TILT DISTANCE 36.3
C LONG 23.77 DEG		C LONG 24.26 DEG	
D LAT 3.48 DEG		D LAT 3.03 DEG	
D LONG 24.03 DEG		D LONG 24.37 DEG	

MISSION / FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2068	661:20	ALT 45.55 KM ALT RT 0.0131 KM/SEC	TILT ANG 3.42 DEG TILT AZIM 18.81 DEG SWING ANG 186.76 DEG N.DEV. 347.91 DEG	SUN AZIM 91.42 DEG INCID ANG 68.28 DEG EMISS ANG 3.51 DEG PHASE ANG 69.37 DEG ALPHA -1.13 DEG	LATITUDE 2.72 DEG LONGITUDE 24.50 DEG
YR. MO. DY	021237.58	LAT 2.64 DEG LONG 24.47 DEG			
FR. MI. SEC					

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 3.23 DEG	AB 37.5 KM	A LAT 2.98 DEG	AB 1.64 KM
A LONG 25.17 DEG	BC 30.7 KM	A LONG 24.63 DEG	BC 4.1 KM
B LAT 2.03 DEG	CD 37.3 KM	B LAT 2.45 DEG	CD 1.64 KM
B LONG 24.88 DEG	DA 32.4 KM	B LONG 24.51 DEG	DA 4.2 KM
C LAT 2.24 DEG	TILT DISTANCE 4.9	C LAT 2.47 DEG	TILT DISTANCE 36.3
C LONG 23.89 DEG		C LONG 24.38 DEG	
D LAT 2.45 DEG		D LAT 3.00 DEG	
D LONG 24.12 DEG		D LONG 24.49 DEG	

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MISSION/

FRAME NO.

TIME
2069 YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 45.57 KM ALT RT 0.0142 KM/SEC LAT 2.61 DEG LONG 24.59 DEG	TILT ANG 3.44 DEG TILT AZIM 20.82 DEG SWING ANG 188.77 DEG N.DEV. 347.91 DEG	SUN AZIM 91.42 DEG INCID ANG 68.16 DEG EMISS ANG 3.53 DEG PHASE ANG 69.37 DEG ALPHA -1.25 DEG	LATITUDE 2.70 DEG LONGITUDE 24.52 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.21 DEG A LONG 28.29 DEG B LAT 2.00 DEG B LONG 26.00 DEG C LAT 2.22 DEG C LONG 24.01 DEG D LAT 3.43 DEG D LONG 24.24 DEG	AB 37.5 KM BC 20.8 KM CD 37.3 KM DA 32.4 KM TILT DISTANCE 4.9 C LONG 24.50 DEG D LAT 2.98 DEG D LONG 24.61 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.95 DEG A LONG 24.75 DEG B LAT 2.42 DEG B LONG 24.63 DEG C LAT 2.45 DEG C LONG 24.50 DEG D LAT 2.98 DEG D LONG 24.61 DEG	AB 16.4 KM BC 4.1 KM CD 16.4 KM DA 4.2 KM TILT DISTANCE 36.6 C LONG 24.52 DEG D LAT 2.98 DEG D LONG 24.61 DEG

MISSION/

FRAME NO.

TIME
2070 YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 45.60 KM ALT RT 0.0162 KM/SEC LAT 2.59 DEG LONG 24.71 DEG	TILT ANG 3.46 DEG TILT AZIM 22.82 DEG SWING ANG 190.77 DEG N.DEV. 347.90 DEG	SUN AZIM 91.41 DEG INCID ANG 68.04 DEG EMISS ANG 3.55 DEG PHASE ANG 69.37 DEG ALPHA -1.37 DEG	LATITUDE 2.67 DEG LONGITUDE 24.75 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.18 DEG A LONG 25.41 DEG B LAT 1.58 DEG B LONG 25.13 DEG C LAT 2.19 DEG C LONG 24.13 DEG D LAT 3.40 DEG D LONG 24.36 DEG	AB 37.6 KM BC 30.8 KM CD 37.3 KM DA 32.4 KM TILT DISTANCE 5.3 C LONG 24.62 DEG D LAT 2.95 DEG D LONG 24.74 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.93 DEG A LONG 24.87 DEG B LAT 2.39 DEG B LONG 24.76 DEG C LAT 2.42 DEG C LONG 24.62 DEG D LAT 2.95 DEG D LONG 24.74 DEG	AB 16.5 KM BC 4.1 KM CD 16.4 KM DA 4.2 KM TILT DISTANCE 36.8 C LONG 24.62 DEG D LAT 2.95 DEG D LONG 24.74 DEG

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MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT RT 0.0183 LAT 2.51 LONG -25.07 DEG	S/C ORIENTATION TILT ANG 3.55 TILT AZIM 28.64 SWING ANG 196.58 N.DEV. 347.89 DEG	PHOTO ILLUMINATION		PRINCIPAL POINT LATITUDE 2.60 DEG LONGITUDE 25.11 DEG
				SIDE LENGTH	CORNER COORDINATE	
MEDIUM RESOLUTION						
				A LAT 3.11 DEG AB 37.8 KM	A LONG 2.85 DEG BC 4.1 KM	
				A LONG 25.79 DEG BC 30.9 KM	B LAT 25.24 DEG CD 16.5 KM	
				B LAT 1.90 DEG CD 37.3 KM	B LONG 25.12 DEG DA 4.2 KM	
				B LONG 25.50 DEG DA 32.5 KM	C LAT 2.35 DEG TILT DISTANCE	
				C LAT 2.12 DEG TILT DISTANCE		
				C LONG 24.50 DEG 5.1	C LONG 24.99 DEG	
				D LAT 3.33 DEG	D LAT 2.88 DEG	
				D LONG 24.73 DEG	D LONG 25.10 DEG	
HIGH RESOLUTION						
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT RT 0.0193 LAT 2.49 LONG 25.19 DEG	S/C ORIENTATION TILT ANG 3.59 DEG TILT AZIM 30.51 DEG SWING ANG 198.45 DEG N.DEV. 347.88 DEG	PHOTO ILLUMINATION		PRINCIPAL POINT LATITUDE 2.57 DEG LONGITUDE 25.24 DEG
				SIDE LENGTH	CORNER COORDINATE	
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT RT 0.0193 LAT 2.49 LONG 25.19 DEG	S/C ORIENTATION TILT ANG 3.59 DEG TILT AZIM 30.51 DEG SWING ANG 198.45 DEG N.DEV. 347.88 DEG	A LAT 2.83 DEG AB 16.5 KM	A LONG 25.36 DEG BC 4.1 KM	PRINCIPAL POINT LATITUDE 2.57 DEG LONGITUDE 25.24 DEG
				A LONG 25.91 DEG BC 30.9 KM	B LAT 2.29 DEG CD 16.5 KM	
				B LAT 1.87 DEG CD 37.3 KM	B LONG 25.25 DEG DA 4.2 KM	
				B LONG 25.62 DEG DA 32.5 KM	C LAT 2.32 DEG TILT DISTANCE	
				C LAT 2.09 DEG 5.1	C LONG 25.11 DEG	
				C LONG 24.63 DEG	D LAT 2.85 DEG	
				D LAT 3.30 DEG	D LONG 25.23 DEG	

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MISSION/
FRAME NO.

2075 TIME 66112C YR. MO. DY ALT 1468.65 KM S/C POSITION
 PR. MI. SEC 1C1217.91 ALT RT 0.3153 KM/SEC TILT ANG 12.82 DEG
 LAT -9.74 DEG SWING ANG 183.30 DEG
 LONG 158.42 DEG N.DEV. 181.09 DEG INCID ANG 76.65 DEG
 ALPHA -1.450 DEG EMISS ANG 24.19 DEG
 PHASE ANG 70.20 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -48.59 DEG	AB 276.3 KM
A LONG 111.77 DEG	BC 210.7 KM
B LAT -1.17 DEG	CD 647.1 KM
B LONG 140.42 DEG	DA 586.4 KM
C LAT -0.68 DEG	TILT DISTANCE 18.3
C LONG 174.27 DEG	
D LAT -48.27 DEG	
D LONG -156.89 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -33.02 DEG	AB 632.9 KM
A LONG 155.15 DEG	BC 131.0 KM
B LAT -12.02 DEG	CD 630.6 KM
B LONG 155.62 DEG	DA 155.7 KM
C LAT -11.92 DEG	TILT DISTANCE 36.7
C LONG 160.94 DEG	
D LAT -32.82 DEG	
D LONG 161.27 DEG	

MISSION/
FRAME NO.

2076 TIME 661120 YR. MO. DY ALT 49.16 KM S/C POSITION
 PR. MI. SEC 160E47.41 ALT RT 0.6703 KM/SEC TILT ANG 0.67 DEG
 LAT 1.21 DEG SWING ANG 194.73 DEG
 LONG 23.71 DEG N.DEV. 347.74 DEG INCID ANG 61.96 DEG
 ALPHA -0.87 DEG EMISS ANG 0.89 DEG
 PHASE ANG 62.82 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.73 DEG	AB 40.4 KM
A LONG 24.44 DEG	BC 34.0 KM
B LAT 0.42 DEG	CD 40.0 KM
B LONG 24.15 DEG	DA 34.0 KM
C LAT 0.67 DEG	TILT DISTANCE 1.2
C LONG 23.76 DEG	
D LAT 1.56 DEG	
D LONG 23.34 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.46 DEG	AB 17.7 KM
A LONG 23.87 DEG	BC 4.4 KM
B LAT 0.89 DEG	CD 17.7 KM
B LONG 23.75 DEG	DA 4.4 KM
C LAT 0.92 DEG	TILT DISTANCE 9.2
C LONG 23.60 DEG	
D LAT 1.49 DEG	
D LONG 23.73 DEG	

MISSION/
FRAME NO.

PRINCIPAL POINT
SUN AZIM 277.43 DEG
INCID ANG 76.65 DEG
EMISS ANG 24.19 DEG
PHASE ANG 70.20 DEG
ALPHA -1.450 DEG

PRINCIPAL POINT

PRINCIPAL POINT
SUN AZIM 91.00 DEG
INCID ANG 61.96 DEG
EMISS ANG 0.89 DEG
PHASE ANG 62.82 DEG
ALPHA -0.87 DEG

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MISSION/
FRAME NO.2077
YR, MO, DY
HR, MI, SEC
160 00 49.45TIME
661120
S/C POSITION
ALT RT 49.31 KM
ALT RT 0.0714 KM/SEC
LAT 1.17 DEG
LONG 23.84 DEG
N.DEV.S/C ORIENTATION
TILT ANG 1.30 DEG
TILT AZIM 104.37 DEG
SWING ANG 272.11 DEG
N.DEV. 347.73 DEG
PHASE ANG 62.82 DEG
ALPHA -1.00 DEGPHOTO ILLUMINATION
SUN AZIM 90.99 DEG
INCID ANG 61.83 DEG
EMISS ANG 1.03 DEG
LATITUDE 1.17 DEG
LONGITUDE 23.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.70 DEG AB 40.6 KM
A LONG 24.57 DEG BC 34.1 KM
B LAT 0.39 DEG CD 40.0 KM
B LONG 24.29 DEG DA 34.1 KM
C LAT 0.64 DEG TILT DISTANCE 1.4
C LONG 23.19 DEG
D LAT 1.93 DEG
D LONG 23.47 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.44 DEG AB 17.7 KM
A LONG 24.00 DEG BC 4.5 KM
B LAT 0.86 DEG CD 17.7 KM
B LONG 23.88 DEG DA 4.5 KM
C LAT 0.90 DEG TILT DISTANCE
C LONG 23.73 DEG 10.6
D LAT 1.47 DEG
D LONG 23.86 DEG

PHOTO ILLUMINATION

SUN AZIM 90.99 DEG
INCID ANG 61.83 DEG
EMISS ANG 1.03 DEG
PHASE ANG 62.82 DEG
ALPHA -1.00 DEGMISSION/
FRAME NO.2078
YR, MO, DY
HR, MI, SEC
160 05 1.60TIME
661120
S/C POSITION
ALT 49.46 KM
ALT RT 0.0725 KM/SEC
LAT 1.15 DEG
LONG 23.96 DEG
N.DEV.S/C ORIENTATION
TILT ANG 1.13 DEG
TILT AZIM 104.10 DEG
SWING ANG 271.83 DEG
N.DEV. 347.73 DEG
PHASE ANG 62.82 DEG
ALPHA -1.13 DEGPHOTO ILLUMINATION
SUN AZIM 90.98 DEG
INCID ANG 61.70 DEG
EMISS ANG 1.16 DEG
PHASE ANG 62.82 DEGCORNER COORDINATE SIDE LENGTH
A LAT 1.44 DEG AB 17.8 KM
A LONG 24.13 DEG BC 4.5 KM
B LAT 0.84 DEG CD 17.8 KM
B LONG 24.01 DEG DA 4.5 KM
C LAT 0.87 DEG TILT DISTANCE
C LONG 23.86 DEG 11.9
D LAT 1.44 DEG
D LONG 23.99 DEGPHOTO ILLUMINATION
SUN AZIM 90.98 DEG
INCID ANG 61.70 DEG
EMISS ANG 1.16 DEG
PHASE ANG 62.82 DEGCORNER COORDINATE SIDE LENGTH
A LAT 1.41 DEG AB 17.8 KM
A LONG 24.13 DEG BC 4.5 KM
B LAT 0.84 DEG CD 17.8 KM
B LONG 24.01 DEG DA 4.5 KM
C LAT 0.87 DEG TILT DISTANCE
C LONG 23.86 DEG 11.9
D LAT 1.44 DEG
D LONG 23.99 DEGPHOTO ILLUMINATION
SUN AZIM 90.98 DEG
INCID ANG 61.70 DEG
EMISS ANG 1.16 DEG
PHASE ANG 62.82 DEGCORNER COORDINATE SIDE LENGTH
A LAT 1.41 DEG AB 17.8 KM
A LONG 24.13 DEG BC 4.5 KM
B LAT 0.84 DEG CD 17.8 KM
B LONG 24.01 DEG DA 4.5 KM
C LAT 0.87 DEG TILT DISTANCE
C LONG 23.86 DEG 11.9
D LAT 1.44 DEG
D LONG 23.99 DEG

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FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2079	YR, MO, DY HR, MI, SEC	661120 160E53.72	ALT RT 49.62 KM ALT RT 3.6736 KM/SEC LAT 1.12 DEG LONG 24.09 DEG	TILT ANG 1.26 DEG TILT AZIM 103.87 DEG SWING ANG 271.60 DEG N.DEV. - N.DEV.	SUN AZIM 90.97 DEG INCID ANG 61.56 DEG EMIS ANG 1.29 DEG PHASE ANG 62.82 DEG ALPHA -1.26 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1.65 DEG	AB 40.9 KM	CORNER COORDINATE SIDE LENGTH
A LONG 24.84 DEG	BC 34.3 KM	A LAT 1.38 DEG AB 17.9 KM
B LAT 0.23 DEG	CD 43.2 KM	A LONG 24.26 DEG BC 4.5 KM
B LONG 24.55 DEG	DA 34.3 KM	B LAT 0.81 DEG CD 17.8 KM
C LAT 0.58 DEG	TILT DISTANCE 1.8	B LONG 24.14 DEG DA 4.5 KM
C LONG 23.45 DEG	1.8	C LAT 0.84 DEG TILT DISTANCE 13.3
D LAT 1.88 DEG		C LONG 23.99 DEG
D LONG 23.73 DEG		D LAT 1.41 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION																				
A LAT 1.63 DEG	AB 41.1 KM	A LONG 24.97 DEG	BC 36.4 KM	CORNER COORDINATE SIDE LENGTH	B LAT 0.30 DEG	CD 40.3 KM	A LAT 1.36 DEG AB 17.9 KM	B LONG 24.69 DEG	DA 36.5 KM	A LONG 24.40 DEG BC 4.5 KM	C LAT 0.55 DEG	TILT DISTANCE 1.9	B LAT 0.78 DEG CD 17.9 KM	C LONG 23.58 DEG	1.9	B LONG 24.27 DEG DA 4.5 KM	D LAT 1.86 DEG		C LAT 0.81 DEG TILT DISTANCE 14.7	D LONG 23.86 DEG		C LONG 24.12 DEG
A LONG 24.97 DEG	BC 36.4 KM	CORNER COORDINATE SIDE LENGTH																				
B LAT 0.30 DEG	CD 40.3 KM	A LAT 1.36 DEG AB 17.9 KM																				
B LONG 24.69 DEG	DA 36.5 KM	A LONG 24.40 DEG BC 4.5 KM																				
C LAT 0.55 DEG	TILT DISTANCE 1.9	B LAT 0.78 DEG CD 17.9 KM																				
C LONG 23.58 DEG	1.9	B LONG 24.27 DEG DA 4.5 KM																				
D LAT 1.86 DEG		C LAT 0.81 DEG TILT DISTANCE 14.7																				
D LONG 23.86 DEG		C LONG 24.12 DEG																				

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2080	YR, MO, DY HR, MI, SEC	661120 150E55.87	ALT 4.978 KM ALT RT 0.0747 KM/SEC LAT 1.09 DEG LONG 24.22 DEG	TILT ANG 1.39 DEG TILT AZIM 103.69 DEG SWING ANG 271.42 DEG N.DEV. - N.DEV.	SUN AZIM 90.96 DEG INCID ANG 61.43 DEG EMIS ANG. 1.43 DEG PHASE ANG 62.82 DEG ALPHA -1.39 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION																				
A LAT 1.36 DEG	AB 17.9 KM	A LONG 24.40 DEG	BC 4.5 KM	CORNER COORDINATE SIDE LENGTH	B LAT 0.78 DEG	CD 17.9 KM	A LAT 1.36 DEG AB 17.9 KM	B LONG 24.27 DEG	DA 4.5 KM	A LONG 24.40 DEG BC 4.5 KM	C LAT 0.81 DEG	TILT DISTANCE 14.7	B LAT 0.78 DEG CD 17.9 KM	C LONG 24.12 DEG		B LONG 24.27 DEG DA 4.5 KM	D LAT 1.39 DEG		C LAT 0.81 DEG TILT DISTANCE 14.7	D LONG 24.25 DEG		C LONG 24.12 DEG
A LONG 24.40 DEG	BC 4.5 KM	CORNER COORDINATE SIDE LENGTH																				
B LAT 0.78 DEG	CD 17.9 KM	A LAT 1.36 DEG AB 17.9 KM																				
B LONG 24.27 DEG	DA 4.5 KM	A LONG 24.40 DEG BC 4.5 KM																				
C LAT 0.81 DEG	TILT DISTANCE 14.7	B LAT 0.78 DEG CD 17.9 KM																				
C LONG 24.12 DEG		B LONG 24.27 DEG DA 4.5 KM																				
D LAT 1.39 DEG		C LAT 0.81 DEG TILT DISTANCE 14.7																				
D LONG 24.25 DEG		C LONG 24.12 DEG																				

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MISSION/
FRAME NO.2C81
YR.MO.DY
HR.MI.SECTIME
661120
160658.C4
S/C POSITION
ALT 49° 94' KM
ALT RT 0.0758 KM/SEC
LAT 1° 07' DEG
LONG 24° 35' DEG
N.DEV.
S/C ORIENTATION
TILT ANG 1° 52' DEG
TILT AZIM 103° 54' DEG
SWING ANG 271° 26' DEG
N.DEV.
PHASE ANG 52° 82' DEG
ALPHA -1° 53' DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	1° 60' DEG	AB 41° 2' KM
A LONG	25° 11' DEG	BC 34° 5' KM
B LAT	0° 27' DEG	CD 40° 4' KM
B LONG	24° 82' DEG	DA 34° 6' KM
C LAT	0° 52' DEG	TILT DISTANCE 2.1
C LONG	23° 71' DEG	
D LAT	1° 83' DEG	
D LONG	23° 59' DEG	

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	1° 33' DEG	AB 18° 0 KM
A LONG	24° 53' DEG	BC 4° 5 KM
B LAT	0° 75' DEG	CD 17° 9 KM
B LONG	24° 40' DEG	DA 4° 5 KM
C LAT	0° 78' DEG	TILT DISTANCE 16° 2
C LONG	24° 26' DEG	
D LAT	1° 36' DEG	
D LONG	24° 38' DEG	

MISSION/
FRAME NO.2082
YR.MO.DY
HR.MI.SECTIME
661120
1609 0.22
S/C POSITION
ALT 50° 11' KM
ALT RT 0.0769 KM/SEC
LAT 1° 04' DEG
LONG 24° 48' DEG
N.DEV.
S/C ORIENTATION
TILT ANG 1° 56' DEG
TILT AZIM 103° 41' DEG
SWING ANG 271° 13' DEG
N.DEV.
PHASE ANG 347° 72' DEG
ALPHA -1° 67' DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	1° 57' DEG	AB 41° 4' KM
A LONG	25° 25' DEG	BC 34° 7' KM
B LAT	0° 24' DEG	CD 40° 5' KM
B LONG	24° 96' DEG	DA 34° 7' KM
C LAT	0° 49' DEG	TILT DISTANCE 2.3
C LONG	23° 84' DEG	
D LAT	1° 80' DEG	
D LONG	24° 13' DEG	

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	1° 30' DEG	AB 18° 0 KM
A LONG	24° 66' DEG	BC 4° 5 KM
B LAT	0° 72' DEG	CD 18° 0 KM
B LONG	24° 54' DEG	DA 4° 5 KM
C LAT	0° 75' DEG	TILT DISTANCE 17° 6
C LONG	24° 39' DEG	
D LAT	1° 33' DEG	
D LONG	24° 52' DEG	

PRINCIPAL POINT	SUN AZIM	LATITUDE	LONGITUDE
1° 06 DEG	90° 94' DEG	51° 30' DEG	24° 39' DEG
EMISS ANG	1° 57' DEG		
PHASE ANG	52° 82' DEG		
ALPHA	-1° 53' DEG		

PRINCIPAL POINT	SUN AZIM	LATITUDE	LONGITUDE
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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FNAME AUTHOR

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MISSION / FRAME NO.	TIME	S/C POSITION			S/C ORIENTATION			PHOT-3 ILLUMINATION			PRINCIPAL POINT						
		YR	MO	DAY	ALT	KM	ALT	KM/SEC	TILT	ANG	SUN AZIM	DEG	LATITUDE	DEG	LONGITUDE	DEG	
20283	1609 2.43	661120	00	00	50	0.28	00	0.0781	1.79	00	90-92	61-32	24-56	52-82	-1-30	00-00	
		HR	MI	SEC	LA1	1.01	DEG			INCID	ANG	1-84					
					LONG	24.61	DEG			EMISS	ANG						
					N.DEV.				347.72	PHASE	ANG						
										ANGLA							

MEDIUM RESOLUTION				HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH		CORNER	COORDINATE	SIDE	
A	LAT 1.45 DEG	AB 41.5 KM		A	LAT 1.27 DEG	AB	
A	LONG 25.39 DEG	BC 34.8 KM		A	LONG 24.80 DEG	BC	
B	LAT 0.71 DEG	CD 40.6 KM		B	LAT 0.69 DEG	CD	
B	LONG 25.16 DEG	DA 34.8 KM		B	LONG 24.67 DEG	DA	
C	LAT 2.46 DEG	TILT DISTANCE 2.5		C	LAT 2.72 DEG	DA	TILT
C	LONG 23.58 DEG			C	LONG 24.53 DEG		
D	LAT 1.78 DEG			D	LAT 1.30 DEG		
D	LONG 24.26 DEG			D	LONG 24.65 DEG		

MISSION /		FRAME NO.		TIME		S/C POSITION		MEDIUM RESOLUTION		
YR.	MO.	DAY	HR.	MIN.	SEC	ALT.	KM	CORNER	COORDINATE	SIDE LENGTH
2004			061120			51°16'	KM	A LAT	1°38' DEG	AB 42.1 KM
			193151	.01		ALT RT	0.0250 KM/SEC	A LONG	24.35' DEG	BC 35.3 KM
						LA 1	0.82 DEG	B LAT	C-02 DEG	CD 41.6 KM
						LONG	23.58 DEG	B LONG	24.C5 DEG	DA 35.5 KM
								C LAT	C-28 DEG	TILT DISTANCE
								C LONG	22.-G1 DEG	1.5
								D LAT	1.-E2 DEG	
								D LONG	23.-D0 DEG	

	PRINCIPAL POINT
PHOTO ILLUMINATION	0-82 DEG
SUN AZIM	90-84 DEG
INCID ANG	60-31 DEG
ERISS ANG	1-10 DEG
PHASE ANG	61-41 DEG
ALPHA	-1-10 DEG
LATITUDE	23-61 DEG
LONGITUDE	

COORDINATE	ANGLE	SIDE LENGTH
A LAT	1.10 DEG	AB 18.4 KH
A LONG	7.75 DEG	BC 4.6 KH
B LAT	0.51 DEG	CD 18.4 KH
B LONG	23.63 DEG	DA 4.6 KH
C LAT	0.54 DEG	TILT DISTANCE 11.4
C LONG	23.48 DEG	
D LAT	1.13 DEG	
D LONG	23.60 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION /

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION
 ALT 51°37' KM
 ALT RT 0.0862 KM/SEC
 LAT 0.80 DEG
 LONG 23.71 DEG
 N.DEV. 347.76 DEG

S/C ORIENTATION
 TILT ANG 1.21 DEG
 TILT AZIM 96.27 DEG
 SWING ANG 264.63 DEG
 INCID ANG 65.17 DEG
 EMISS ANG 1.24 DEG
 PHASE ANG 61.41 DEG
 ALPHA -1.24 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.25 DEG AB 42.3 KM
 A LONG 24.49 DEG BC 35.5 KM
 B LAT -C.01 DEG CD 41.7 KM
 B LONG 24.15 DEG DA 35.5 KM
 C LAT C.25 DEG TILT DISTANCE 1.7
 C LONG 23.05 DEG
 C LAT 1.59 DEG
 D LONG 23.33 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.07 DEG AB 18.5 KM
 A LONG 23.89 DEG BC 4.6 KM
 B LAT 0.49 DEG CD 18.5 KM
 B LONG 23.76 DEG DA 4.6 KM
 C LAT 0.51 DEG TILT DISTANCE 12.8
 C LONG 23.61 DEG
 D LAT 1.11 DEG
 D LONG 23.74 DEG

MISSION /

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION
 ALT 51.56 KM
 ALT RT 0.0873 KM/SEC
 LAT 0.77 DEG
 LONG 23.85 DEG
 N.DEV. 347.76 DEG

S/C ORIENTATION
 TILT ANG 1.34 DEG
 TILT AZIM 96.85 DEG
 SWING ANG 264.61 DEG
 INCID ANG 60.93 DEG
 EMISS ANG 1.38 DEG
 PHASE ANG 61.41 DEG
 ALPHA -1.37 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.33 DEG AB 42.5 KM
 A LONG 24.63 DEG BC 35.6 KM
 B LAT -0.05 DEG CD 41.8 KM
 B LONG 24.33 DEG DA 35.7 KM
 C LAT 0.21 DEG TILT DISTANCE 1.9
 C LONG 23.18 DEG
 D LAT 1.56 DEG
 D LONG 23.47 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT 1.05 DEG AB 18.6 KM
 A LONG 24.03 DEG BC 4.7 KM
 B LAT 0.45 DEG CD 18.5 KM
 B LONG 23.90 DEG DA 4.7 KM
 C LAT 0.48 DEG TILT DISTANCE 14.2
 C LONG 23.75 DEG
 D LAT 1.08 DEG
 D LONG 23.88 DEG

PHOTO ILLUMINATION
 SUN AZIM 93.92 DEG
 INCID ANG 65.17 DEG
 EMISS ANG 1.24 DEG

PHOTO ILLUMINATION
 SUN AZIM 90.81 DEG
 INCID ANG 60.93 DEG
 EMISS ANG 1.38 DEG
 PHASE ANG 61.41 DEG
 ALPHA -1.37 DEG

PHOTO ILLUMINATION
 SUN AZIM 90.81 DEG
 INCID ANG 60.93 DEG
 EMISS ANG 1.38 DEG
 PHASE ANG 61.41 DEG
 ALPHA -1.37 DEG

PHOTO ILLUMINATION
 SUN AZIM 90.76 DEG
 INCID ANG 60.93 DEG
 EMISS ANG 1.38 DEG
 PHASE ANG 61.41 DEG
 ALPHA -1.37 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
2087
YR.MD.DY
HR.MI.SEC
193120 0.0884 KM/SEC
ALT RT 0.74 DEG
LAT 23.93 DEG
LONG N.DEV.

S/C POSITION
ALT 51.76 KM
TILT AZIM 97.32 DEG
SWING ANG 265.18 DEG
N.DEV. 347.76 DEG

S/C ORIENTATION
TILT ANG 1.48 DEG
TILT AZIM 97.32 DEG
SWING ANG 265.18 DEG
N.DEV. 347.76 DEG

PHOTO ILLUMINATION
SUN AZIM 90.80 DEG
INCID ANG 59.70 DEG
EMISS ANG 1.52 DEG
PHASE ANG 61.41 DEG
ALPHA -1.51 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.20 DEG	AB 42.7 KM
A LONG 24.77 DEG	BC 35.9 KM
-C.CB DEG	CD 41.0 KM
B LAT -C.19 DEG	DA 35.9 KM
B LONG 24.47 DEG	TILT DISTANCE 2.1
C LAT C.19 DEG	
C LONG 23.31 DEG	
D LAT 1.54 DEG	
D LONG 23.61 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.02 DEG	AB 18.5 KM
A LONG 24.16 DEG	BC 4.7 KM
B LAT 1.42 DEG	CD 18.6 KM
B LONG 24.03 DEG	DA 4.7 KM
C LAT 1.45 DEG	TILT DISTANCE 15.7
C LONG 23.88 DEG	
D LAT 1.05 DEG	
D LONG 24.01 DEG	

MISSION/

FRAME NO.

2088

YR.MD.DY

HR.MI.SEC

193759 0.0596 KM/SEC

ALT RT 0.71 DEG

LAT 24.11 DEG

LONG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.99 DEG	AB 18.7 KM
A LONG 24.30 DEG	BC 4.7 KM
B LAT 0.39 DEG	CD 18.7 KM
B LONG 24.17 DEG	DA 4.7 KM
C LAT 0.42 DEG	TILT DISTANCE 17.1
C LONG 24.02 DEG	
D LAT 1.02 DEG	
D LONG 24.15 DEG	

PRINCIPAL POINT

LATITUDE 0.71 DEG

LONGITUDE 24.16 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

2C89 TIME: 461120 S/C POSITION: 52.15 KM
 YR, MO, DY 1938-1-13 ALT RT 0.4927 KM/SEC
 Hr, Mi, SEC LAT N.5A DEG LGNG 24.25 DEG
 N.DEV. 347.76 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.425 DEG AB 43.1 KM
 A LONG 26.45 DEG BC 36.1 KM
 B LAT -6.15 DEG CD 43.2 KM
 B LONG 24.75 DEG DA 36.3 KM
 C LAT 0.12 DEG TILT DISTANCE 2.5
 C LONG 23.59 DEG
 D LAT 1.48 DEG
 D LONG 32.88 DEG

S/C ORIENTATION TILT ANG 1.75 DEG SWING ANG 265.81 DEG
 INCID ANG 98.05 DEG EMISS ANG 1.80 DEG
 PHASE ANG 61.41 DEG ALPHA -1.79 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.96 DEG AB 18.8 KM
 A LONG 24.44 DEG BC 4.7 KM
 B LAT 3.36 DEG CD 18.7 KM
 B LONG 24.31 DEG DA 4.7 KM
 C LAT 0.39 DEG TILT DISTANCE 18.6
 C LONG 24.16 DEG
 D LAT 0.99 DEG
 D LONG 24.29 DEG

MISSION/
FRAME NO.

2C90 TIME: 611120 S/C POSITION: 52.37 KM
 YR, MO, DY 1938 4.41 ALT RT 0.0919 KM/SEC
 Hr, Mi, SEC LAT 0.65 DEG LONG 24.39 DEG
 N.DEV. 347.76 DEG

S/C ORIENTATION TILT ANG 1.89 DEG SWING ANG 266.10 DEG
 INCID ANG 98.34 DEG EMISS ANG 1.95 DEG
 PHASE ANG 61.41 DEG ALPHA -1.93 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.22 DEG AB 43.4 KM
 A LONG 25.20 DEG BC 36.2 KM
 B LAT -0.19 DEG CD 42.3 KM
 B LONG 24.29 DEG DA 36.3 KM
 C LAT 0.09 DEG TILT DISTANCE 2.7
 C LONG 23.73 DEG
 D LAT 1.45 DEG
 D LONG 24.02 DEG

S/C ORIENTATION TILT ANG 1.89 DEG SWING ANG 265.81 DEG
 INCID ANG 98.05 DEG EMISS ANG 1.80 DEG
 PHASE ANG 61.41 DEG ALPHA -1.79 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.93 DEG AB 18.9 KM
 A LONG 24.58 DEG BC 4.7 KM
 B LAT 1.32 DEG CD 18.8 KM
 B LONG 24.45 DEG DA 4.7 KM
 C LAT 0.36 DEG TILT DISTANCE 20.1
 C LONG 24.30 DEG
 D LAT 0.97 DEG
 D LONG 24.43 DEG

S/C ORIENTATION TILT ANG 1.89 DEG SWING ANG 265.81 DEG
 INCID ANG 98.34 DEG EMISS ANG 1.95 DEG
 PHASE ANG 61.41 DEG ALPHA -1.93 DEG

PHOTO ILLUMINATION SUN AZIM 90.77 DEG INCID ANG 59.62 DEG
 LATITUDE 0.68 DEG LONGITUDE 24.37 DEG

PHOTO ILLUMINATION SUN AZIM 90.76 DEG INCID ANG 59.48 DEG
 LATITUDE 0.65 DEG LONGITUDE 24.44 DEG

LUNAR CRIBITIC PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

TIME

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 51.59 KM ALT AT 3.930 KM/SEC	TILT ANG 2.73 DEG TILT AZIM 58.40 DEG SWING ANG 268.35 DEG N.DEV. 347.76 DEG	SUN AZIM 90.74 DEG INCID ANG 59.33 DEG EMISS ANG 2.39 DEG PHASE ANG 61.01 DEG ALPHA -2.37 DEG	LATITUDE 2.52 DEG LONGITUDE 24.58 DEG
LAT 24.52 DEG			
LONG 24.55 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 1.43 DEG	AB 4.35 KM
A LONG 25.74 DEG	BC 26.5 KM
B LAT -6.21 DEG	CD 42.5 KM
R LONG 25.54 DEG	DA 36.5 KM
C LAT 1.44 DEG	TILT DISTANCE 2.3
C LONG 23.87 DEG	
D LAT 1.43 DEG	
D LONG 24.55 DEG	

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0.90 DEG	AB 13.9 KM
A LONG 24.73 DEG	BC 4.8 KM
B LAT 3.29 DEG	CD 18.9 KM
B LONG 24.59 DEG	DA 4.8 KM
C LAT 0.72 DEG	TILT DISTANCE 21.6
C LONG 24.44 DEG	
D LAT 0.94 DEG	
D LONG 24.57 DEG	

MISSION/

FRAME NO.

TIME

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 44.03 KM ALT RT -0.0475 KM/SEC	TILT ANG 13.52 DEG TILT AZIM 12.07 DEG SWING ANG 180.11 DEG N.DEV. 347.59 DEG	SUN AZIM 91.42 DEG INCID ANG 75.91 DEG EMISS ANG 13.87 DEG PHASE ANG 78.65 DEG ALPHA -3.35 DEG	LATITUDE 4.23 DEG LONGITUDE 4.58 DEG
H LONG 4.57 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 4.65 DEG	AB 18.7 KM
A LONG 5.32 DEG	BC 28.4 KM
B LAT 5.63 DEG	CD 38.7 KM
H LONG 4.93 DEG	DA 34.9 KM
C LAT 3.62 DEG	TILT DISTANCE 19.3
C LONG 4.21 DEG	
D LAT 5.49 DEG	
E LONG 4.17 DEG	

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 4.55 DEG	AB 26.8 KM
A LONG 4.71 DEG	BC 3.9 KM
B LAT 4.01 DEG	CD 16.8 KM
R LONG 4.59 DEG	DA 4.3 KM
C LAT 4.04 DEG	TILT DISTANCE 46.6
C LONG 4.46 DEG	
D LAT 4.58 DEG	
D LONG 4.57 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORT IMAGE DATA

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MISSION/
FRAME NO.2097
YR, MO, DY
HR, MI, SECTIME
061121
JUL 1973.21S/C POSITION
ALT 44.15 KM
ALT RT -0.0573 KM/SEC
LAT A.15 DEG
LONG -C.31 DEG
N.DEV. N.DEV.

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.02 DEG	AB 67.2 KM
A LONG C.74 DEG	BC 175.4 KM
B LAT -3.50 DEG	CD 146.5 KM
A LONG 7.84 DEG	DA 61.3 KM
C LAT -3.77 DEG	TILT DISTANCE 99.5
C LONG -4.95 DEG	
D LAT 2.75 DEG	D LAT 1.79 DEG
D LONG -1.23 DEG	D LONG -0.92 DEG

S/C ORIENTATION
TILT ANG 58.50 DEG
TILT AZIM 91.74 DEG
SWING ANG 1.37 DEG
N.DEV. 328.74 DEG
PHASE ANG 76.23 DEG
ALPHA -24.68 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.75 DEG	AB 85.5 KM
A LONG -0.47 DEG	BC 17.2 KM
B LAT -7.15 DEG	CD 26.5 KM
A LONG 1.97 DEG	DA 7.7 KM
C LAT -5.98 DEG	TILT DISTANCE 21.6
C LONG -3.02 DEG	
D LAT 1.79 DEG	D LAT 1.79 DEG
D LONG -0.92 DEG	D LONG -0.92 DEG

MISSION/
FRAME NO.2094
YR, MO, DY
HR, MI, SECTIME
061121
162525.51S/C POSITION
ALT 49.23 KM
ALT RT 0.0875 KM/SEC
LAT 0.60 DEG
LONG 12.77 DEG
N.DEV. N.DEV.PHOTO ILLUMINATION
SUN AZIM 90.39 DEG
INCID ANG 78.10 DEG
EMISS ANG 72.31 DEG
PHASE ANG 76.23 DEG
ALPHA -24.68 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.75 DEG	AB 85.5 KM
A LONG -0.47 DEG	BC 17.2 KM
B LAT -7.15 DEG	CD 26.5 KM
A LONG 1.97 DEG	DA 7.7 KM
C LAT -5.98 DEG	TILT DISTANCE 21.6
C LONG -3.02 DEG	
D LAT 1.79 DEG	D LAT 1.79 DEG
D LONG -0.92 DEG	D LONG -0.92 DEG

PHOTO ILLUMINATION
SUN AZIM 90.72 DEG
INCID ANG 69.54 DEG
EMISS ANG 1.46 DEG
PHASE ANG 61.93 DEG
ALPHA -1.39 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.85 DEG	AB 17.7 KM
A LONG -12.94 DEG	BC 4.5 KM
B LAT 0.28 DEG	CD 17.7 KM
B LONG 12.82 DEG	DA 4.4 KM
C LAT 1.31 DEG	TILT DISTANCE 15.1
C LONG 12.68 DEG	
D LAT 1.88 DEG	D LAT 12.80 DEG
D LONG 12.80 DEG	D LONG 12.80 DEG

PHOTO ILLUMINATION
SUN AZIM 90.54 DEG
INCID ANG 69.54 DEG
EMISS ANG 1.46 DEG
PHASE ANG 61.93 DEG
ALPHA -1.39 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION /

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 42°84' KM	TILT ANG 0°71 DEG	SUN AZIM 91°28 DEG	LATITUDE 2°42 DEG
ALT RT 0.6127 KM/SEC	TILT AZIM 79°48 DEG	INCID ANG 69°44 DEG	LONGITUDE 0°44 DFG
LAT 2°42 DEG	SWING ANG 247°38 DEG	EMISS ANG 0°73 DEG	
LONG 0.42 DEG	N.DEV. 347°89 DEG	PHASE ANG 70°15 DEG	
		-ALPHA -0.71 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2°67 DEG	AB 33.5 KM
A LONG 1°22 DEG	BC 28.1 KM
B LAT 1°79 DEG	CD 33.2 KM
B LONG 0°78 DEG	DA 28.3 KM
C LAT 1°59 DEG	TILT DISTANCE 1.1
C LONG -3°12 DEG	
D LAT 3°46 DEG	
D LONG 0°10 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2°65 DEG	AB 14.7 KM
A LONG 0°55 DEG	AC 3°7 KM
B LAT 2°18 DEG	CD 14.7 KM
B LONG 0°44 DEG	DA 3°7 KM
C LAT 2°20 DEG	TILT DISTANCE 7.5
C LONG 0°33 DEG	
D LAT 2°67 DEG	
D LONG 0°43 DEG	

MISSION /

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 42°79 KM	TILT ANG 0°28 DEG	SUN AZIM 91°28 DEG	LATITUDE 2°51 DEG
ALT RT 0.0069 KM/SEC	TILT AZIM 121°09 DEG	INCID ANG 70°20 DEG	LONGITUDE -2°38 DEG
LAT 2°51 DEG	SWING ANG 289°02 DEG	EMISS ANG 0°29 DEG	
LONG -2°08 DFG	N.DEV. 348°02 DEG	PHASE ANG 70°45 DEG	
		-ALPHA -0.25 DFG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2°73 DEG	AB 14.7 KM
A LONG -1°97 DEG	AC 3°7 KM
B LAT 2°26 DEG	CD 14.7 KM
B LONG -2°07 DEG	DA 3°7 KM
C LAT 2°29 DEG	TILT DISTANCE 2.9
C LONG -2°19 DEG	
D LAT 2°76 DEG	
D LONG -2°39 DFG	

CORNER COORDINATE	SIDE LENGTH
A LAT 2°65 DEG	AB 14.7 KM
A LONG 0°55 DEG	AC 3°7 KM
B LAT 2°18 DEG	CD 14.7 KM
B LONG 0°44 DEG	DA 3°7 KM
C LAT 2°20 DEG	TILT DISTANCE 7.5
C LONG 0°33 DEG	
D LAT 2°67 DEG	
D LONG 0°43 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

2097

TIME

661122

YR, MO, DY

1971, 01, 20

HR, MI, SEC

025236.41

S/C POSITION
 ALT 43°81' KM
 ALT RT 0.376 KM/SEC
 LAT 7°49' DEG
 LONG -1°38' DEG

S/C ORIENTATION
 TILT ANG 0.39 DEG
 TILT AZIM 115°51' DEG
 SWING ANG 283°52' CFG
 N.DEV. 348°12' DEG

PHOTO ILLUMINATION
 SUN AZIM 91°28' DEG
 INCID ANG 73°28' DEG
 EMISS ANG 0.49 DEG
 PHASE ANG 70°45' DEG
 ALPHA -0.36 DEG

MISSION/
FRAME NO.

2098

TIME

661122

YR, MO, DY

1971, 01, 20

HR, MI, SEC

025238.20

S/C POSITION
 ALT 40°82' KM
 ALT RT 0.0088 KM/SEC
 LAT 2.47' DEG
 LONG -1.87' DEG

S/C ORIENTATION
 TILT ANG 0.50 DEG
 TILT AZIM 112°56' DEG
 SWING ANG 280°57' DEG
 N.DEV. 348°01' DEG

PHOTO ILLUMINATION
 SUN AZIM 91°27' DEG
 INCID. ANG 69°97' DEG
 EMISS ANG 0.51 DEG
 PHASE ANG 70°45' DEG
 ALPHA -0.47 DEG

MISSION/
FRAME NO.

2098

TIME

661122

YR, MO, DY

1971, 01, 20

HR, MI, SEC

025238.20

S/C POSITION
 ALT 40°82' KM
 ALT RT 0.0088 KM/SEC
 LAT 2.47' DEG
 LONG -1.87' DEG

S/C ORIENTATION
 TILT ANG 0.50 DEG
 TILT AZIM 112°56' DEG
 SWING ANG 280°57' DEG
 N.DEV. 348°01' DEG

PHOTO ILLUMINATION
 SUN AZIM 91°27' DEG
 INCID. ANG 69°97' DEG
 EMISS ANG 0.51 DEG
 PHASE ANG 70°45' DEG
 ALPHA -0.47 DEG

MISSION/
FRAME NO.

2098

TIME

661122

YR, MO, DY

1971, 01, 20

HR, MI, SEC

025238.20

S/C POSITION
 ALT 40°82' KM
 ALT RT 0.0088 KM/SEC
 LAT 2.47' DEG
 LONG -1.87' DEG

S/C ORIENTATION
 TILT ANG 0.50 DEG
 TILT AZIM 112°56' DEG
 SWING ANG 280°57' DEG
 N.DEV. 348°01' DEG

PHOTO ILLUMINATION
 SUN AZIM 91°27' DEG
 INCID. ANG 69°97' DEG
 EMISS ANG 0.51 DEG
 PHASE ANG 70°45' DEG
 ALPHA -0.47 DEG

MISSION/
FRAME NO.

2098

TIME

661122

YR, MO, DY

1971, 01, 20

HR, MI, SEC

025238.20

S/C POSITION
 ALT 40°82' KM
 ALT RT 0.0088 KM/SEC
 LAT 2.47' DEG
 LONG -1.87' DEG

S/C ORIENTATION
 TILT ANG 0.50 DEG
 TILT AZIM 112°56' DEG
 SWING ANG 280°57' DEG
 N.DEV. 348°01' DEG

PHOTO ILLUMINATION
 SUN AZIM 91°27' DEG
 INCID. ANG 69°97' DEG
 EMISS ANG 0.51 DEG
 PHASE ANG 70°45' DEG
 ALPHA -0.47 DEG

LUNAR CRATER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/ FRAME NO.	TIME 21S: YR, MO, DY HR, MIN, SEC	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION				PRINCIPAL POINT			
				TILT ANG	TILT AZIM	SUN AZIM	INCID ANG	LATITUDE	DEG	LONGITUDE	DEG
TT45 2195	651122 195044.01	ALT RT LAT RT LONG	41° 83' KM 2.45 DEG -1.74 DEG	3° 41' DEG TILT AZIM 110° 40' SWING ANG 278° 61' N.DEV. 348.71	DEG DEG DEG DEG	9° 27' DEG 69° 86' DEG 55° 52' DEG 70° 45' DEG ALPHA	2.44 -1.75 2.45 -0.58	DEG	DEG		
MEDIUM RESOLUTION											
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE	SIDE LENGTH		CORNER COORDINATE	SIDE LENGTH		CORNER COORDINATE	SIDE LENGTH
A LAT	5.88 DEG	AB 31.5 KM		A LAT	2.66 DEG		AB	14.7 KM		AB	14.7 KM
A LONG	-1.16 DEG	BC 2.0 KM		A LONG	-1.64 DEG		BC	3.7 KM		BC	3.7 KM
B LAT	1.91 DEG	CD 7.1 KM		B LAT	2.19 DEG		CD	14.7 KM		CD	14.7 KM
B LONG	-1.39 DEG	DA 29.2 KM		B LONG	-1.74 DEG		DA	3.7 KM		DA	3.7 KM
C LAT	5.22 DEG	TILT DISTANCE 3.9		C LAT	2.22 DEG						
C LONG	-2.30 DEG			C LONG	-1.86 DEG						
D LAT	3.27 DEG			D LAT	2.69 DEG						
D LONG	-2.58 DEG			D LONG	-1.75 DEG						
HIGH RESOLUTION											
MISSION/ FRAME NO.	TIME 21S: YR, MO, DY HR, MIN, SEC	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION				PRINCIPAL POINT			
TT45 2195	651122 195044.01	ALT PT LAT LONG	40° 85' KM 0.0107 KM/SEC 2.42 DEG -1.65 DEG	TILT ANG TILT AZIM SWING ANG N.DEV. 348.00	0° 72' DEG 109° 24' DEG 277° 24' DEG DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	91° 27' DEG 69° 75' DEG 0° 73 DEG 70° 45' DEG -0.70 DEG	2.42 -1.63 2.45 -0.70	DEG	DEG	
MEDIUM RESOLUTION											
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE	SIDE LENGTH		CORNER COORDINATE	SIDE LENGTH		CORNER COORDINATE	SIDE LENGTH
A LAT	2.86 DEG	AB 33.3 KM		A LAT	2.64 DEG		AB	14.7 KM		AB	14.7 KM
A LONG	-1.75 DEG	BC 26.2 KM		A LONG	-1.52 DEG		BC	3.7 KM		BC	3.7 KM
B LAT	1.78 DEG	CD 33.2 KM		B LAT	2.17 DEG		CD	14.7 KM		CD	14.7 KM
B LONG	-1.28 DEG	DA 26.2 KM		B LONG	-1.62 DEG		DA	3.7 KM		DA	3.7 KM
C LAT	1.58 DEG	TILT DISTANCE 4.0		C LAT	2.19 DEG						
C LONG	-2.19 DEG			C LONG	-1.74 DEG						
D LAT	3.55 DEG			D LAT	2.67 DEG						
D LONG	-1.56 DEG			D LONG	-1.64 DEG						

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

2102

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 46.87 KM
ALT RT 0.3116 KM/SEC
LAT 2.41 DEG
LONG -1.54 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.54 DEG AB 33.5 KM
A LONG -0.54 DEG BC 26.2 KM
B LAT 1.75 DEG CD 33.2 KM
B LONG -1.17 DEG DA 26.1 KM
C LAT 1.56 DEG TILT DISTANCE 1.2
C LONG -2.08 DEG
D LAT 3.03 DEG
D LONG -1.45 DEGS/C ORIENTATION
TILT ANG 0.83 DEG
TILT AZIM 108.24 DEG
SWING ANG 276.24 DFG
N.DEV. 349.7C DEG
PHASE ANG 70.45 DEG
ALPHA -0.81 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.52 DEG AB 24.7 KM
A LONG -1.41 DEG BC 3.7 KM
B LAT 2.14 DEG CD 14.7 KM
B LONG -1.51 DEG DA 3.7 KM
C LAT 2.17 DEG TILT DISTANCE
C LONG -1.63 DEG
D LAT 2.64 DEG
D LONG -1.53 DFGPHOTO ILLUMINATION
SUN AZIM 91.76 DEG
INCID ANG 69.54 DEG
EMISS ANG 0.35 DEG
PHASE ANG 70.45 DEG
ALPHA -0.82 DEGMISSION/
FRAME NO.

2102

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 46.89 KM
ALT RT 0.5126 KM/SEC
LAT 2.38 DEG
LONG -1.43 DFG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.82 DEG AB 33.5 KM
A LONG -0.82 DEG BC 28.3 KM
B LAT 1.73 DEG CD 33.2 KM
B LONG -1.56 DEG DA 28.3 KM
C LAT 1.83 DEG TILT DISTANCE 1.3
C LONG -1.57 DEG
D LAT 3.00 DEG
D LONG -1.74 DEGS/C ORIENTATION
TILT ANG 3.94 DEG
TILT AZIM 107.43 DEG
SWING ANG 275.47 DEG
N.DEV. 347.99 DEGPHOTO ILLUMINATION
SUN AZIM 91.26 DEG
INCID ANG 69.52 DEG
EMISS ANG 0.91 DEG
PHASE ANG 70.45 DEG
ALPHA -0.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.59 DEG AB 14.7 KM
A LONG -1.31 DEG BC 3.7 KM
B LAT 2.12 DEG CD 14.7 KM
B LONG -1.41 DEG DA 3.7 KM
C LAT 2.15 DEG TILT DISTANCE
C LONG -1.52 DEG
D LAT 2.62 DEG
D LONG -1.42 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION

FRAME NO.

2103

YR, MO, DY

661122

HR, MI, SEC

025247.28

		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		ALT	40° 92' KM	TILT ANG	1.05 DEG	SUN AZIM	91° 26' DEG	LATITUDE	2.435 DEG
		ALT RT	0.0135 KM/SEC	TIILT AZIM	106.87 DEG	INCID ANG	69° 41' DEG	LONGITUDE	-1.29 DEG
		LAT	2.35 DEG	SWING ANG	274.86 DEG	EMISS ANG	1.08 DEG		
		LONG	-1.32 DEG	N.DEV.	347.99 DEG	PHASE ANG	70° 45' DEG		
						ALPHA	-1.04 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION	
A LAT	2.79 DEG	AB	33.6 KM	CORNER COORDINATE	SIDE LENGTH
A LONG	-6.71 DEG	BC	28.3 KM	A LAT	2.57 DEG
B LAT	1.71 DEG	CD	33.2 KM	A LONG	-1.18 DEG
B LONG	-0.54 DEG	DA	28.3 KM	B LAT	2.10 DEG
C LAT	1.91 DEG	TIILT DISTANCE		B LONG	-1.29 DEG
C LONG	-1.85 DEG	1.5		C LAT	-2.12 DEG
D LAT	2.98 DEG			C LONG	-1.41 DEG
D LONG	-1.62 DEG			D LAT	2.60 DEG

MISSION

FRAME NO.

2104

YR, MO, DY

661122

HR, MI, SEC

062136.63

		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		ALT	41° 14' KM	TILT ANG	0.64 DEG	SUN AZIM	91° 23' DEG	LATITUDE	2.15 DEG
		ALT RT	0.0211 KM/SEC	TIILT AZIM	94.66 DEG	INCID ANG	68.61 DEG	LONGITUDE	-2.27 DEG
		LAT	2.16 DEG	SWING ANG	262.83 DEG	EMISS ANG	0.65 DEG		
		LONG	-2.28 DEG	N.DEV.	348.17 DEG	PHASE ANG	69° 26' DEG		
					ALPHA	ALPHA	-0.65 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION	
A LAT	2.60 DEG	AB	33.7 KM	CORNER COORDINATE	SIDE LENGTH
A LONG	-1.68 DEG	BC	28.4 KM	A LAT	2.38 DEG
B LAT	1.52 DEG	CD	33.5 KM	A LONG	-2.16 DEG
B LONG	-1.91 DEG	DA	28.5 KM	B LAT	1.90 DEG
C LAT	1.71 DEG	TIILT DISTANCE		B LONG	-2.26 DEG
C LONG	-2.83 DEG	0.9		C LAT	1.93 DEG
D LAT	2.79 DEG			C LONG	-2.38 DEG
D LONG	-2.60 DEG			D LAT	2.41 DEG

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION																															
A LAT	2.57 DEG	AB	14.7 KM	CORNER COORDINATE	SIDE LENGTH																														
A LONG	-1.18 DEG	BC	3.7 KM	B LAT	2.10 DEG	CD	14.7 KM	B LONG	-1.29 DEG	DA	3.7 KM	C LAT	-2.12 DEG	TIILT DISTANCE		C LAT	-1.12 DEG	C LONG	-1.41 DEG	1.2		C LONG	-2.12 DEG	D LAT	2.60 DEG			D LAT	-1.30 DEG	D LONG	-1.30 DEG			D LONG	-2.28 DEG
B LAT	2.10 DEG	CD	14.7 KM																																
B LONG	-1.29 DEG	DA	3.7 KM																																
C LAT	-2.12 DEG	TIILT DISTANCE		C LAT	-1.12 DEG																														
C LONG	-1.41 DEG	1.2		C LONG	-2.12 DEG																														
D LAT	2.60 DEG			D LAT	-1.30 DEG																														
D LONG	-1.30 DEG			D LONG	-2.28 DEG																														

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

2105 TIME 661122
 YR MO DY ALT RT 062136.47
 HR MI SEC S/C POSITION
 ALT 41.18 KM
 ALT RT 0.0221 KM/SEC
 LAT 2.13 DEG
 LONG -2.17 DEG
 N.DEV. 348.17 DEG

S/C ORIENTATION
 TILT ANG 0.75 DEG
 TILT AZIM 95.76 DEG
 SWING ANG 263.92 DEG
 N.DEV. 69.26 DEG
 ALPHA -0.77 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.58 DEG AB 33.8 KM
 A LONG -1.57 DEG BC 26.4 KM
 B LAT 1.49 DEG CD 33.5 KM
 B LONG -1.80 DEG DA 26.5 KM
 C LAT 1.69 DEG TILT DISTANCE 1.1
 C LONG -2.71 DEG
 D LAT 2.77 DEG
 D LONG -2.49 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.36 DEG AB 14.8 KM
 A LONG -2.04 DEG BC 3.7 KM
 B LAT 1.88 DEG CD 14.8 KM
 B LONG -2.14 DEG DA 3.7 KM
 C LAT 1.91 DEG TILT DISTANCE 7.9
 C LONG -2.26 DEG
 D LAT 2.38 DEG
 D LONG -2.16 DEG

MISSION/
FRAME NO.

2106 TIME 661122
 YR MO DY ALT RT 062140.31
 HR MI SEC S/C POSITION
 ALT 41.23 KM
 ALT RT 0.0230 KM/SEC
 LAT 2.11 DEG
 LONG -2.06 DEG
 N.DEV. 348.16 DEG

S/C ORIENTATION
 TILT ANG 0.86 DEG
 TILT AZIM 96.57 DEG
 SWING ANG 264.73 DEG
 N.DEV. 69.26 DEG
 ALPHA -0.88 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.56 DEG AB 33.9 KM
 A LONG -1.45 DEG BC 28.4 KM
 B LAT 1.47 DEG CD 33.5 KM
 B LONG -1.68 DEG DA 28.5 KM
 C LAT 1.66 DEG TILT DISTANCE 1.2
 C LONG -2.50 DEG
 D LAT 2.74 DEG
 D LONG -2.37 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.33 DEG AB 14.8 KM
 A LONG -1.93 DEG BC 3.7 KM
 B LAT 1.86 DEG CD 14.8 KM
 B LONG -2.03 DEG DA 3.7 KM
 C LAT 1.88 DEG TILT DISTANCE 9.2
 C LONG -2.15 DEG
 D LAT 2.36 DEG
 D LONG -2.05 DEG

S/C ORIENTATION
 SUN AZIM 91.22 DEG
 INCID ANG 68.50 DEG
 EMISS ANG 0.77 DEG
 PHASE ANG 69.26 DEG
 ALPHA -0.77 DEG

S/C ORIENTATION
 SUN AZIM 91.22 DEG
 INCID ANG 68.38 DEG
 EMISS ANG 0.88 DEG
 PHASE ANG 69.26 DEG
 ALPHA -0.88 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

FRAMENNO

	TIME	S/C POSITION	ALT	41.27. KM	TILT ANG	9.93	CEG	SUN AZIM	91.21 DEG	LATITUDE	2.48 DEG
		FR.HI.	RT	0.1240 KN/SEC	TILT AZIM	97.19	CEG	INCID ANG	68.27 DEG	LONGITUDE	-1.92 DEG
2107	061122	062142.14	ALT	2.09 DEG	SWING ANG	265.35	CEG	EMISS ANG	1.90 DEG		
			LONG	-1.95 DEG	N.DEV.	348.16	PHASE ANG	69.26 DEG			
							ALPHA				-1.00 DEG

MEDIUM RESOLUTION		SIDE	LEN
CORNER	COORDINATE		
A LAT	2.53 DEG	AB	35.9
A LONG	-1.34 DEG	BC	28.5
B LAT	1.44 DEG	CD	33.6
B LONG	-1.57 DEG	DA	28.5
C LAT	1.64 DEG	TILT DIS	
C LONG	-2.49 DEG		
D LAT	2.72 DEG		
D LONG	-2.26 DEG		

MISSION

FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2108	YR, MO, DY HR, MI, SEC	661122 C62143.98	ALT ALT 0.025G LAT 2.05 LONG -1.84	TILT TILT ANG AZIM 1.09 97.68 DEG DEG SWING N.DEV. ANG 265.84 DEG 348.16	SUN INCID AZIM EMISS DEG ANG ANG 91.21 68.15 1.12 1.12 DEG DEG PHASE ALPHA ANG 69.26 -1.11 DEG DEG

MEDIUM RESOLUTION		HIGH RESOLUTION			
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 2.51 DEG	AR 34.1 KM	A LAT -2.29 DEG	AB 14.9 KM		
A LONG -1.22 DEG	BC 28.5 KM	A LONG -1.70 DEG	BC 3.7 KM		
B LAT 1.42 DEG	CD 33.5 KM	B LAT 1.81 DEG	CD 14.8 KM		
B LONG -1.45 DEG	DA 28.6 KM	B LONG -1.80 DEG	DA 3.7 KM		
C LAT 1.62 DEG	TILT DISTANCE	C LAT 1.83 DEG	TILT DISTANCE		
C LONG -2.37 DEG	1.5	C LONG -1.92 DEG	1.1.6		
D LAT 2.73 DEG		D LAT 2.31 DEG			
D LONG -2.15 DEG		D LONG -1.82 DEG			

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.2109
YR-MO-DY
HR-MI-SEC

TIME 661122 S/C POSITION ALT 41°36' KM
 ALT RT 0.0259 KM/SEC TILT ANG 1.20 DEG
 LAT 2.04 DEG TILT AZIM 98.08 DEG
 LONG -1.73 DEG SWING ANG 266.24 DEG
 N.DEV. 348.15 DEG PHASE ANG 69.26 DEG
 ALPHA -1.22 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.49 DEG AB 34.0 KM
 A LONG -1.01 DEG BC 28.5 KM
 B LAT 1.39 DEG CD 33.5 KM
 B LONG -1.74 DEG DA 28.5 KM
 C LAT 1.59 DEG TILT DISTANCE
 C LONG -2.26 DEG 1.7
 D LAT 2.67 DEG 1.7
 D LONG -2.03 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.26 DEG AB 14.9 KM
 A LONG -1.59 DEG BC 3.7 KM
 B LAT 1.78 DEG CD 14.9 KM
 B LONG -1.69 DEG DA 3.7 KM
 C LAT 1.81 DEG TILT DISTANCE
 C LONG -1.81 DEG 12.8
 D LAT 2.29 DEG
 D LONG -1.71 DEG

MISSION/
FRAME NO.2110
YR-MO-DY
HR-MI-SEC

TIME 661122 S/C POSITION ALT 41°41' KM
 ALT RT 0.0269 KM/SEC TILT ANG 1.32 DEG
 LAT 2.02 DEG SWING ANG 266.57 DEG
 LONG -1.62 DEG N.DEV. 348.15 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.47 DEG AB 34.1 KM
 A LONG -0.99 DEG BC 28.6 KM
 B LAT 1.37 DEG CD 33.5 KM
 B LONG -1.22 DEG DA 28.7 KM
 C LAT 1.57 DEG TILT DISTANCE
 C LONG -2.15 DEG 1.9
 D LAT 2.65 DEG
 D LONG -1.92 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.24 DEG AB 14.9 KM
 A LONG -1.47 DEG BC 3.7 KM
 B LAT 1.76 DEG CD 14.9 KM
 B LONG -1.57 DEG DA 3.7 KM
 C LAT 1.78 DEG TILT DISTANCE
 C LONG -1.69 DEG 14.0
 D LAT 2.26 DEG
 D LONG -1.59 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91°20 DEG LATITUDE 2.01 DEG
 INCID ANG 68.04 DEG LONGITUDE -1.58 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91°20 DEG LATITUDE 2.01 DEG
 INCID ANG 67.93 DEG LONGITUDE -1.58 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91°20 DEG LATITUDE 2.01 DEG
 INCID ANG 67.93 DEG LONGITUDE -1.58 DEG

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT				
2111	YR, MO, DY HR, MI, SEC	661122 062149.48	ALT RT LAT LONG	41.46 KH 0.0278 KM/SEC 1.99 DEG -1.50 DEG	TILT ANG TILT AZIM SWING ANG N.DEV.	1.43 DEG 98.70 DEG 265.84 DEG 348.15 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG	91.19 DEG 67.81 DEG 1.46 DEG 69.26 DEG	LATITUDE LONGITUDE	1.99 DEG -1.47 DEG
MEDIUM RESOLUTION										
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION							
A LAT	2.44 DEG	AB 34.2 KM	A LAT	2.222 DEG	AB 1.49 KM	CORNER COORDINATE SIDE LENGTH				
A LONG	-0.88 DEG	BC 28.6 KM	A LONG	-1.36 DEG	BC 3.7 KM					
B LAT	1.34 DEG	CD 33.6 KM	B LAT	1.73 DEG	CD 14.9 KM					
B LONG	-1.11 DEG	DA 28.7 KM	B LONG	-1.46 DEG	DA 3.7 KM					
C LAT	1.54 DEG	TILT DISTANCE 2.0	C LAT	1.76 DEG	TIILT DISTANCE 15.2					
C LONG	-2.03 DEG		C LONG	-1.58 DEG						
D LAT	2.63 DEG		D LAT	2.24 DEG						
D LONG	-1.81 DEG		D LONG	-1.48 DEG						
HIGH RESOLUTION										
CORNER COORDINATE		SIDE LENGTH	MEDIUM RESOLUTION							
A LAT	3.49 DEG	AB 15.0 KM	A LAT	3.49 DEG	AB 15.0 KM	CORNER COORDINATE SIDE LENGTH				
A LONG	-11.57 DEG	BC 3.8 KM	A LONG	-11.57 DEG	BC 3.8 KM					
B LAT	3.01 DEG	CD 15.0 KM	B LAT	3.01 DEG	CD 15.0 KM					
B LONG	-11.67 DEG	DA 3.8 KM	B LONG	-11.67 DEG	DA 3.8 KM					
C LAT	3.03 DEG	TILT DISTANCE 0.2	C LAT	3.03 DEG	TIILT DISTANCE 1.9					
C LONG	-11.79 DEG		C LONG	-11.79 DEG						
D LAT	3.52 DEG		D LAT	3.52 DEG						
D LONG	-11.69 DEG		D LONG	-11.69 DEG						

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	46°79 KM	TILT ANG	1°19 DEG	SUN AZIM	90°78 DEG	LATITUDE	0°69 DEG
ALT RT	0.0772 KM/SEC	TILT AZIM	109°00 DEG	INCID ANG	62°28 DEG	LONGITUDE	-1°25 DEG
LAT	0°76 DEG	SWING ANG	276°53 DEG	EMISS ANG	1°22 DEG		
LONG	-1.26 DEG	N.DEV.	347°54 DEG	PHASE ANG	63°44 DEG		
				ALPHA	-1°16 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION																															
A LAT	1°20 DEG	AB	38.5 KM	CORNER COORDINATE	SIDE LENGTH																														
A LONG	-C.59 DEG	BC	32.3 KM	B LAT	-C.34 DEG	CD	37.9 KM	A LAT	0°95 DEG	B LONG	-C.86 DEG	DA	32.3 KM	A LONG	-1°13 DEG	C LAT	C.20 DEG	TILT DISTANCE	B LAT	0°41 DEG	C LONG	-1°50 DEG	1.7	B LONG	-1°25 DEG	D LAT	1°42 DEG		C LAT	0°44 DEG	D LONG	-1°63 DEG		C LONG	-1°38 DEG
B LAT	-C.34 DEG	CD	37.9 KM	A LAT	0°95 DEG																														
B LONG	-C.86 DEG	DA	32.3 KM	A LONG	-1°13 DEG																														
C LAT	C.20 DEG	TILT DISTANCE	B LAT	0°41 DEG																															
C LONG	-1°50 DEG	1.7	B LONG	-1°25 DEG																															
D LAT	1°42 DEG		C LAT	0°44 DEG																															
D LONG	-1°63 DEG		C LONG	-1°38 DEG																															

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	46°86 KM	TILT ANG	1°32 DEG	SUN AZIM	90°76 DEG	LATITUDE	0°66 DEG
ALT RT	0.0782 KM/SEC	TILT AZIM	108°32 DEG	INCID ANG	62°15 DEG	LONGITUDE	-1°13 DEG
LAT	0°68 DEG	SWING ANG	275°66 DEG	EMISS ANG	1°35 DEG		
LONG	-1.16 DEG	N.DEV.	347°54 DEG	PHASE ANG	63°44 DEG		
				ALPHA	-1°29 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION																															
A LAT	1°17 DEG	AB	38.6 KM	CORNER COORDINATE	SIDE LENGTH																														
A LONG	-C.45 DEG	BC	32.4 KM	B LAT	-0.07 DEG	CD	38.0 KM	A LAT	0°92 DEG	B LONG	-0°73 DEG	DA	32.4 KM	A LONG	-1°00 DEG	C LAT	C.17 DEG	TILT DISTANCE	B LAT	0°38 DEG	C LONG	-1°77 DEG	1.8	B LONG	-1°12 DEG	D LAT	1°39 DEG		C LAT	0°41 DEG	D LONG	-1°50 DEG		C LONG	-1°26 DEG
B LAT	-0.07 DEG	CD	38.0 KM	A LAT	0°92 DEG																														
B LONG	-0°73 DEG	DA	32.4 KM	A LONG	-1°00 DEG																														
C LAT	C.17 DEG	TILT DISTANCE	B LAT	0°38 DEG																															
C LONG	-1°77 DEG	1.8	B LONG	-1°12 DEG																															
D LAT	1°39 DEG		C LAT	0°41 DEG																															
D LONG	-1°50 DEG		C LONG	-1°26 DEG																															

D LAT		D LONG	

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MISSION/ FRAME NO.		TIME YR-MO-DY HR-MI-SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION TILT ANG SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE	PAGE 159
2115		661122 164513.24	47.03 KM 0.0793 KM/SEC C.65 DEG -1.04 DEG	1.044 DEG 275.39 DEG 347.54 DEG	90.73 DEG 62.3 DEG 1.48 DEG 63.44 DEG -1.42 DEG	3.64 DEG -1.00 DEG	
MEDIUM RESOLUTION							
			CORNER COORDINATE A LAT 1.15 DEG A LONG -0.32 DEG B LAT -0.10 DEG B LONG -0.60 DEG C LAT 0.14 DEG C LONG -1.65 DEG D LAT 1.37 DEG D LONG -1.37 DEG	SIDE LENGTH AB 36.8 KM BC 32.5 KM CD 38.1 KM DA 32.5 KM TILT DISTANCE 2.0	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE	
HIGH RESOLUTION							
			CORNER COORDINATE A LAT 0.89 DEG A LONG -0.87 DEG B LAT 0.35 DEG B LONG -0.99 DEG C LAT 0.38 DEG C LONG -1.13 DEG D LAT 0.92 DEG D LONG -1.01 DEG	SIDE LENGTH AB 16.9 KM BC 4.3 KM CD 16.9 KM DA 4.3 KM TILT DISTANCE 15.2	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE	
MISSION/ FRAME NO.		TIME YR-MO-DY HR-MI-SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION TILT ANG SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE	
2116		661122 164515.32	47.19 KM 0.804 KM/SEC 0.62 DEG -0.91 DEG	1.057 DEG 274.82 DEG 347.54 DEG	90.74 DEG 61.90 DEG 1.51 DEG 63.44 DEG -1.55 DEG	0.61 DEG -0.87 DEG	
MEDIUM RESOLUTION							
			CORNER COORDINATE A LAT 1.12 DEG A LONG -0.19 DEG B LAT -0.13 DEG B LONG -0.47 DEG C LAT 0.11 DEG C LONG -1.52 DEG D LAT 1.34 DEG D LONG -1.25 DEG	SIDE LENGTH AB 39.0 KM BC 32.7 KM CD 38.2 KM DA 32.7 KM TILT DISTANCE 2.2	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE	
HIGH RESOLUTION							
			CORNER COORDINATE A LAT 0.87 DEG A LONG -0.74 DEG B LAT 0.32 DEG B LONG -0.86 DEG C LAT 0.35 DEG C LONG -1.00 DEG D LAT 0.90 DEG D LONG -0.88 DEG	SIDE LENGTH AB 17.0 KM BC 4.3 KM CD 16.9 KM DA 4.3 KM TILT DISTANCE 16.7	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE	

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MISSION/

FRAME NO.

TIME
YR.MD.DY
HR.MI.SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION	
ALT	47.36 KM	TILT ANG	1.70 DEG	SUN AZIM	90.73 DEG
ALT RT	3.0814 KM/SEC	TILT AZIM	106.90 DEG	INCID ANG	61.77 DEG
LAT	0.60 DEG	SWING ANG	274.42 DEG	EMISS ANG	1.74 DEG
LONG	-0.79 DEG	NDEV.	347.53 DEG	PHASE ANG	63.44 DEG
				ALPHA	-1.68 DEG

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	1.10 DEG	AB 39.1 KM
A LONG	-C.06 DEG	BC 32.8 KM
B LAT	-0.16 DEG	CD 38.3 KM
B LONG	-C.34 DEG	DA 32.8 KM
C LAT	0.08 DEG	TILT DISTANCE
C LONG	-1.39 DEG	2.4
D LAT	1.32 DEG	
D LONG	-1.12 DEG	

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	0.84 DEG	AB 17.1 KM
A LONG	-0.61 DEG	BC 4.3 KM
B LAT	0.29 DEG	CD 17.0 KM
B LONG	-0.74 DEG	DA 4.3 KM
C LAT	0.32 DEG	TILT DISTANCE
C LONG	-0.87 DEG	18.0
D LAT	0.87 DEG	
D LONG	-0.75 DEG	

MISSION/

FRAME NO.

TIME
YR.MD.DY
HR.MI.SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION	
ALT	47.53 KM	TILT ANG	1.83 DEG	SUN AZIM.	90.71 DEG
ALT RT	0.0825 KM/SEC	TILT AZIM	106.55 DEG	INCID ANG	61.64 DEG
LAT	0.57 DEG	SWING ANG	274.07 DEG	EMISS ANG	1.88 DEG
LONG	-0.66 DEG	NDEV.	347.53 DEG	PHASE ANG	63.44 DEG
				ALPHA	-1.81 DEG

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH
A LAT	1.07 DEG	AB 39.3 KM
A LONG	0.67 DEG	BC 32.9 KM
B LAT	-0.19 DEG	CD 38.4 KM
B LONG	-0.21 DEG	DA 32.9 KM
C LAT	0.05 DEG	TILT DISTANCE
C LONG	-1.26 DEG	2.5
D LAT	1.29 DEG	
D LONG	-0.99 DEG	

CORNER COORDINATE		SIDE LENGTH
A LAT	0.82 DEG	AB 17.1 KM
A LONG	-0.48 DEG	BC 4.3 KM
B LAT	0.26 DEG	CD 17.1 KM
B LONG	-0.61 DEG	DA 4.3 KM
C LAT	0.30 DEG	TILT DISTANCE
C LONG	-0.74 DEG	19.4
D LAT	0.85 DEG	
D LONG	-0.62 DEG	

PRINCIPAL POINT	
LATITUDE	0.59 DEG
LONGITUDE	-1.74 DEG

PRINCIPAL POINT	
LATITUDE	0.56 DEG
LONGITUDE	-0.51 DEG

PRINCIPAL POINT	
LATITUDE	0.71 KM
LONGITUDE	-0.68 KM

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MISSION/

FRAME NO.

2119

TIME

661122.

YR, MO, DY

164521.60

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.71 KM

TILT RT

0.0836 KM/SEC

SWING ANG

0.54 DEG

N.DEV.

-0.54 DEG

S/C ORIENTATION

TILT ANG

1.95 DEG

INCID ANG

106.45 DEG

EMISS ANG

2.01 DEG

PHASE ANG

63.44 DEG

ALPHA

-1.94 DEG

MISSION/

FRAME NO.

2120

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2121

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.71 KM

TILT RT

0.0836 KM/SEC

SWING ANG

0.54 DEG

N.DEV.

-0.54 DEG

S/C ORIENTATION

TILT ANG

1.95 DEG

INCID ANG

106.45 DEG

EMISS ANG

2.01 DEG

PHASE ANG

63.44 DEG

ALPHA

-1.94 DEG

MISSION/

FRAME NO.

2122

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2123

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2124

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2125

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2126

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2127

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2128

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2129

TIME

661122

YR, MO, DY

164523.72

HR, MI, SEC

LAT

LONG

S/C POSITION

ALT

47.88 KM

TILT RT

0.0847 KM/SEC

SWING ANG

0.52 DEG

N.DEV.

-0.41 DEG

S/C ORIENTATION

TILT ANG

2.08 DEG

INCID ANG

105.98 DEG

EMISS ANG

2.14 DEG

PHASE ANG

63.44 DEG

ALPHA

-2.07 DEG

MISSION/

FRAME NO.

2130

TIME

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04/10/71

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MISSION/
FRAME NO.

2121 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 49.16' KM TILT ANG 1.24 DEG SUN AZIM 90.50 DEG LATITUDE 0.32 DEG
 HR, MI, SEC ALT RT 0.0915 KM/SEC TILT AZIM 107.42 DEG INCID ANG 60.67 DEG LONGITUDE -1.41 DEG
 LAT 0.33 DEG SWING ANG 275.33 DEG EMISS ANG 1.28 DEG
 LONG -1.44 DEG N.DEV. 347.62 DEG PHASE ANG 61.89 DEG
 ALPHA -1.22 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.25 DEG AB 40.5 KM
 A LONG -C.70 DEG BC 34.0 KM
 B LAT -0.45 DEG CD 39.9 KM
 B LONG -C.59 DEG DA 34.0 KM
 C LAT -0.20 DEG TILT DISTANCE 1.7
 C LONG -2.08 DEG
 D LAT 1.08 DEG
 D LONG -1.80 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.59 DEG AB 17.7 KM
 A LONG -1.27 DEG BC 4.4 KM
 B LAT 0.02 DEG CD 17.7 KM
 B LONG -1.49 DEG DA 4.4 KM
 C LAT 0.05 DEG TILT DISTANCE 13.2
 C LONG -1.54 DEG
 D LAT 0.62 DEG
 D LONG -1.42 DEG

MISSION/
FRAME NO.

2122 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 49.36' KM TILT ANG 1.37 DEG SUN AZIM 90.59 DEG LATITUDE 0.29 DEG
 HR, MI, SEC ALT RT 0.3926 KM/SEC TILT AZIM 106.89 DEG INCID ANG 60.53 DEG LONGITUDE -1.27 DEG
 LAT 0.30 DEG SWING ANG 274.50 DEG EMISS ANG 1.41 DEG
 LONG -1.31 DEG N.DEV. 347.62 DEG PHASE ANG 61.89 DEG
 ALPHA -1.36 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.82 DEG AB 40.7 KM
 A LONG -C.57 DEG BC 34.2 KM
 B LAT -0.49 DEG CD 40.3 KM
 B LONG -0.85 DEG DA 34.2 KM
 C LAT -0.23 DEG TILT DISTANCE 1.9
 C LONG -1.95 DEG
 D LAT 1.05 DEG
 D LONG -1.67 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.56 DEG AB 17.8 KM
 A LONG -1.14 DEG BC 4.5 KM
 B LAT -0.01 DEG CD 17.7 KM
 B LONG -1.26 DEG DA 4.5 KM
 C LAT 0.02 DEG TILT DISTANCE 14.6
 C LONG -1.41 DEG
 D LAT 0.59 DEG
 D LONG -1.28 DEG

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MISSION/
FRAME NO.

2124
YR. MD. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	661122	ALT 49.56 KM ALT PT 0.0518 KM/SEC	TILT ANG 1.51 DEG TILT AZIM 105.45 DEG SWING ANG 274.36 DEG N.DEV.	SUN AZIM 90.57 DEG INCID ANG 60.40 DEG EMISS ANG 1.55 DEG PHASE ANG 61.89 DEG ALPHA	LATITUDE 0.26 DEG LONGITUDE -1.14 DEG
	201816.50	LAT 0.27 DEG LONG -1.18 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH			HIGH RESOLUTION
A LAT 0.80 DEG	AB 4.0.9 KM			CORNER COORDINATE SIDE LENGTH
A LONG -C.43 DEG	BC 34.3 KM			A LAT 4.53 DEG AB 17.8 KM
B LAT -0.52 DEG	CD 4.0.1 KM			A LONG -1.00 DEG BC 4.5 KM
B LONG -C.72 DEG	DA 34.3 KM			B LAT -0.04 DEG CD 17.8 KM
C LAT -C.26 DEG	TILT DISTANCE 2.1			B LONG -1.13 DEG DA 4.5 KM
C LONG -1.82 DEG				C LAT -0.01 DEG TILT DISTANCE 16.0
D LAT 1.03 DEG				C LONG -1.27 DEG
D LONG -1.53 DEG				D LAT 0.56 DEG

MISSION/
FRAME NO.

2124
YR. MD. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	661122	ALT 49.77 KM ALT RT 0.0949 KM/SEC	TILT ANG 1.64 DEG TILT AZIM 106.08 DEG SWING ANG 273.69 DEG N.DEV.	SUN AZIM 90.56 DEG INCID ANG 60.26 DEG EMISS ANG 1.69 DEG PHASE ANG 61.89 DEG ALPHA	LATITUDE 0.23 DEG LONGITUDE -1.03 DEG
	201816.50	LAT 0.24 DEG LONG -1.05 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH			HIGH RESOLUTION
A LAT C.77 DEG	AB 4.1.1 KM			CORNER COORDINATE SIDE LENGTH
A LONG -C.29 DEG	BC 34.4 KM			A LAT 0.50 DEG AB 17.9 KM
B LAT -C.55 DEG	CD 4.0.3 KM			A LONG -0.87 DEG BC 4.5 KM
B LONG -G.58 DEG	DA 34.5 KM			B LAT -0.07 DEG CD 17.9 KM
C LAT -C.30 DEG	TILT DISTANCE 2.3			B LONG -0.99 DEG DA 4.5 KM
C LONG -1.68 DEG				C LAT -0.04 DEG TILT DISTANCE 17.4
D LAT 1.00 DEG				C LONG -1.14 DEG
D LONG -1.40 DEG				D LAT 0.53 DEG

MISSION/
FRAME NO.

2124
YR. MD. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	661122	ALT 49.77 KM ALT RT 0.0949 KM/SEC	TILT ANG 1.64 DEG TILT AZIM 106.08 DEG SWING ANG 273.69 DEG N.DEV.	SUN AZIM 90.56 DEG INCID ANG 60.26 DEG EMISS ANG 1.69 DEG PHASE ANG 61.89 DEG ALPHA	LATITUDE 0.23 DEG LONGITUDE -1.03 DEG
	201816.50	LAT 0.24 DEG LONG -1.05 DEG			

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

2125
YR-MO-DY
HR-MI-SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	661122	ALT 49.98 KM ALT RT 0.0960 KM/SEC LAT 0.22 DEG LONG -0.92 DEG	TILT ANG 1.78 DEG TILT AZIM 105.77 DEG SWING ANG 273.38 DEG N.DEV.	SUN AZIM 90.54 DEG INCID ANG 60.12 DEG EMISS ANG 1.83 DEG PHASE ANG 61.89 DEG ALPHA -1.77 DEG	LATITUDE 2.21 DEG LONGITUDE -0.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.75 DEG	AB 41.3 KM
A LONG -0.15 DEG	BC 34.6 KM
B LAT -0.59 DEG	CD 40.4 KM
B LONG -0.44 DEG	DA 34.6 KM
C LAT -0.33 DEG	TILT DISTANCE 2.5
C LONG -1.55 DEG	G.98 DEG
D LAT -1.26 DEG	-1.26 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.48 DEG	AB 18.0 KM
A LONG -0.73 DEG	BC 4.5 KM
B LAT -0.10 DEG	CD 17.9 KM
B LONG -0.86 DEG	DA 4.5 KM
C LAT -0.07 DEG	TILT DISTANCE 18.9
C LONG -1.00 DEG	
D LAT 0.51 DEG	
D LONG -0.88 DEG	

MISSION/

FRAME NO.

2126
YR-MO-DY
HR-MI-SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	661122	ALT 50.19 KM ALT RT 0.0971 KM/SEC LAT 0.19 DEG LONG -0.78 DEG	TILT ANG 1.91 DEG TILT AZIM 105.50 DEG SWING ANG 273.11 DEG N.DEV.	SUN AZIM 90.53 DEG INCID ANG 59.99 DEG EMISS ANG 1.97 DEG PHASE ANG 61.89 DEG ALPHA -1.90 DEG	LATITUDE 0.17 DEG LONGITUDE -0.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.72 DEG	AB 41.6 KM
A LONG -0.01 DEG	BC 34.8 KM
B LAT -0.62 DEG	CD 4.0 KM
B LONG -0.30 DEG	DA 34.8 KM
C LAT -0.36 DEG	TILT DISTANCE 2.7
C LONG -1.42 DEG	
D LAT 0.95 DEG	
D LONG -1.13 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.45 DEG	AB 18.1 KM
A LONG -0.59 DEG	BC 4.5 KM
B LAT -0.13 DEG	CD 18.0 KM
B LONG -0.72 DEG	DA 4.5 KM
C LAT -0.10 DEG	TILT DISTANCE 20.3
C LONG -0.87 DEG	
D LAT 0.48 DEG	
D LONG -0.74 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/ FRAME NO. 2127

TIME 661122

YR. MO. DY 1970.07.27

HR. MI. SEC 201625.15

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 59°41' KM	TILT ANG 2.05 DEG	SUN AZIM 90°51' DEG	LATITUDE 7°14' DEG
ALT RT 0.0983 KM/SEC	TILT AZIM 105°27' DEG	INCID ANG 59°85' DEG	LONGITUDE -0.59 DEG
LAT 0.16 DEG	SWING ANG 272°88' DEG	EMISS ANG 2.11 DEG	
LONG -0.65 DEG	N.DEV. 347.62 DEG	PHASE ANG 61°85' DEG	
		ALPHA -2.94 DEG	

MISSION/ FRAME NO. 2128

TIME 661122

YR. MO. DY 1970.07.27

HR. MI. SEC 201627.38

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50°63' KM	TILT ANG 2.19 DEG	SUN AZIM 90°49' DEG	LATITUDE 7°12' DEG
ALT RT 0.0994 KM/SEC	TILT AZIM 105°06' DEG	INCID ANG 59°71' DEG	LONGITUDE -0.46 DEG
LAT 0.13 DEG	SWING ANG 272°67' DEG	EMISS ANG 2.25 DEG	
LONG -0.52 DEG	N.DEV. 347.62 DEG	PHASE ANG 61°89' DEG	
		ALPHA -2.18 DEG	

MISSION/

FRAME NO. 2129

TIME 661122

YR. MO. DY 1970.07.27

HR. MI. SEC 201627.38

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 42°3' KM	TILT ANG 2.19 DEG	SUN AZIM 90°49' DEG	LATITUDE 7°12' DEG
ALT RT 35°1' KM	TILT AZIM 105°06' DEG	INCID ANG 59°71' DEG	LONGITUDE -0.46 DEG
LAT 0.09 DEG	SWING ANG 272°67' DEG	EMISS ANG 2.25 DEG	
LONG -0.02 DEG	N.DEV. 347.62 DEG	PHASE ANG 61°89' DEG	
		ALPHA -2.18 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 51° 92' KM
ALT RT 0.1052 KM/SEC
LAT -7° 03' DEG
LONG -1° 57' DEG
N.DEV. 347.51 DEGS/C ORIENTATION
TILT ANG 1.38 DEG
TILT AZIM 104.55 DEG
SWING ANG 272.16 DEG
N.DEV. 347.51 DEGPHOTO ILLUMINATION
SUN AZIM 90.41 DEG
INCID ANG 59.12 DEG
EMISS ANG 1.42 DEG
PHASE ANG 60.50 DEG
ALPHA -1.38 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 2° 52' DEG AB 42.9 KM
A LONG -0.89 DEG BC 35.9 KM
B LAT -0.86 DEG CD 42.1 KM
B LONG -1.19 DEG DA 36.3 KM
C LAT -C.59 DEG TILT DISTANCE 1.9
C LONG -2.34 DEG D LAT 0° 76' DEG
D LAT -2.35 DEG D LONG -2.35 DEGPHOTO ILLUMINATION
SUN AZIM 90.41 DEG
INCID ANG 59.12 DEG
EMISS ANG 1.42 DEG
PHASE ANG 60.50 DEG
ALPHA -1.38 DEGMISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 52.16 KM
ALT RT C.1064 KM/SEC
LAT -0.05 DEG
LONG -1.53 DEG
N.DEV. 347.51 DEGS/C ORIENTATION
TILT ANG 1.52 DEG
TILT AZIM 104.31 DEG
SWING ANG 271.92 DEG
N.DEV. 347.51 DEGPHOTO ILLUMINATION
SUN AZIM 90.39 DEG
INCID ANG 58.98 DEG
EMISS ANG 1.56 DEG
PHASE ANG 60.50 DEG
ALPHA -1.52 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 6.49 DEG AB 43.1 KM
A LONG -0.74 DEG BC 36.1 KM
B LAT -0.89 DEG CD 42.2 KM
B LONG -1.05 DEG DA 36.1 KM
C LAT -C.62 DEG TILT DISTANCE 2.1
C LONG -2.20 DEG D LAT 3.74 DEG
D LAT -1.91 DEG D LONG -1.91 DEGPHOTO ILLUMINATION
SUN AZIM 90.41 DEG
INCID ANG 59.12 DEG
EMISS ANG 1.42 DEG
PHASE ANG 60.50 DEG
ALPHA -1.38 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0° 21' DEG AB 18.8 KM
A LONG -1.35 DEG BC 4.7 KM
B LAT -0.39 DEG CD 18.7 KM
B LONG -1.48 DEG DA 4.7 KM
C LAT -0.36 DEG TILT DISTANCE 1.1
C LONG -1.63 DEG D LAT 0° 25' DEG
D LONG -1.50 DEGPHOTO ILLUMINATION
SUN AZIM 90.39 DEG
INCID ANG 58.98 DEG
EMISS ANG 1.56 DEG
PHASE ANG 60.50 DEG
ALPHA -1.52 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
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04/13/71:

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MISSION/
FRAME NO.

2131
YR, MO, DY
HR, MI, SEC

TIME
661122
234120.56

S/C POSITION
ALT RT
LAT
LONG

KM
52.41
5.1575
-5.09
-7.39

DEG
KIN/SEC
DEG
DEG

N.DEV.
347.61

DEG
0.66

PHOTO ILLUMINATION
SUN AZIM
INCID ANG
SWING ANG
PHASE ANG
ALPHA

90.37 DEG
58.84 DEG
1.71 DEG
60.50 DEG
-1.66 DEG

PRINCIPAL POINT
LATITUDE
LONGITUDE

-0.13 DEG
-1.35 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT C.47 DEG AB 4.7 3 KM
A LONG -C.59 DEG BC 36.3 KM
B LAT -F.53 DEG CD 42.4 KM
B LONG -C.50 DEG DA 36.3 KM
C LAT -R.66 DEG TILT DISTANCE 2.3
C LONG -2.26 DEG 2.3
C LAT F.71 DEG
D LONG -1.72 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.18 DEG AB 18.9 KM
A LONG -1.20 DEG BC 4.7 KM
B LAT -3.42 DEG CD 18.8 KM
B LONG -1.34 DEG DA 4.7 KM
C LAT -1.39 DEG TILT DISTANCE 17.6
C LONG -1.49 DEG
D LAT 0.22 DEG
D LONG -1.36 DEG

MISSION/
FRAME NO.

2132
YR, MO, DY
HR, MI, SEC

TIME
661122
234120.56

S/C POSITION
ALT RT
LAT
LONG

KM
52.66
C.1687
-1.12
-1.25

DEG
KIN/SEC
DEG
DEG

N.DEV.
347.51

DEG
2.5

PHOTO ILLUMINATION
SUN AZIM
INCID ANG
SWING ANG
PHASE ANG
ALPHA

90.35 DEG
58.69 DEG
1.86 DEG
60.50 DEG
-1.81 DEG

PRINCIPAL POINT
LATITUDE
LONGITUDE

-0.13 DEG
-1.29 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT C.44 DEG AB 4.5 KM
A LONG -F.44 DEG BC 36.5 KM
B LAT -C.95 DEG CD 42.5 KM
B LONG -F.75 DEG DA 36.5 KM
C LAT -F.69 DEG TILT DISTANCE 2.5
C LONG -1.92 DEG 2.5
C LAT C.84 DEG
D LONG -1.42 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 1.16 DEG AB 19.9 KM
A LONG -1.06 DEG BC 4.8 KM
B LAT -0.46 DEG CD 18.9 KM
B LONG -1.19 DEG DA 4.8 KM
C LAT -6.42 DEG TILT DISTANCE 19.1
C LONG -1.35 DEG
D LAT 0.19 DEG
D LONG -1.21 DEG

LUNAR CRIBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

PAGE 149

MISSION/

FRAME NC.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

2113 661122 ALT TILT ANG 1.35 CFG SUN AZIM 90° 33 DEG LATITUDE -2° 1.5 DEG

YR, MO, DY ALT RT 5.1.92 TILT AZIM 103.83 DEG LONGITUDE -1° 9.6 DEG

FR, MI, SEC 214122.92 KM SEC INCID ANG 58.55 DEG

LAT -C.15 DEG SWING ANG 271.41 DEG EMISS ANG 2° 21 DEG

LONG -1.11 DEG N.DEV. 347.61 DFG PHASE ANG 60° 50 DEG

ALPHA -1.95 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT C.41 DEG AB 4.3.8 KM

A LONG -0.29 DEG BC 35.5 KM

B LAT -1.02 DEG CD 4.2.9 KM

B LONG -C.65 DEG DA 36.7 KM

C LAT -C.72 DEG TILT DISTANCE

C LONG -1.78 DEG 2.7

D LAT C.65 DEG

D LONG -1.48 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 2.13 DFG AR 19.1 KM

A LONG -0.91 DEG BC 4.8 KM

B LAT -1.49 DEG CD 19.0 KM

B LONG -1.05 DEG DA 4.8 KM

C LAT -3.45 DEG

C LONG -1.20 DEG

D LAT 3.16 DEG

D LONG -1.07 DEG

MISSION/

FRAME NC.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

2114 661122 ALT TILT ANG 2.39 DEG SUN AZIM 90° 32 DEG LATITUDE -3° 27 DEG

YR, MO, DY ALT RT 53.19 KM SEC INCID ANG 58.40 DEG LONGITUDE -3° 91 DEG

FR, MI, SEC 224125.31 KM SEC EMISS ANG 2.15 DEG

LAT -0.18 DEG SWING ANG 271.28 DEG PHASE ANG 60° 50 DEG

LONG -0.97 DEG 347.62 DEG ALPHA -2.1n DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT C.38 DEG AB 4.1 KM

A LONG -0.14 DEG BC 36.9 KM

B LAT -1.04 DEG CD 42.9 KM

B LONG -0.45 DEG DA 36.9 KM

C LAT -0.76 DEG TILT DISTANCE

C LONG -1.64 DEG 2.9

D LAT C.43 DEG

D LONG -1.33 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 3.10 DEG AB 19.2 KM

A LONG -0.76 DEG BC 4.8 KM

B LAT -1.92 DEG CD 19.1 KM

B LONG -0.90 DEG DA 4.8 KM

C LAT -3.49 DEG TILT DISTANCE

C LONG -1.05 DEG

D LAT 7.13 DEG

D LONG -3.92 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

2135

YR, MO, DY

661122

HR, MI, SEC

234727.72

TIME

ALT

53.45

KN

S/C POSITION

ALT RT

0.1123

KM/SEC

S/C ORIENTATION

TILT ANG

2.24

DEG

PHOTO ILLUMINATION

SUN AZIM

90.30

DEG

PRINCIPAL POINT

LATITUDE

-0.23

DEG

LATITUDE

INCID ANG

58.25

DEG

LONGITUDE

-0.76

DEG

N.MI, SEC

LAT

-0.21

DEG

N.DEV.

SWING ANG

271.17

DEG

N.DEV.

TILT ANG

2.31

DEG

N.DEV.

EWSS ANG

2.31

DEG

N.DEV.

PHASE ANG

60.50

DEG

N.DEV.

ALPHA

-2.25

DEG

MISSION/

FRAME NO.

2136

YR, MO, DY

661122

HR, MI, SEC

234710.16

TIME

ALT

53.73

KH

S/C POSITION

ALT RT

0.1135

KM/SEC

S/C ORIENTATION

TILT ANG

2.39

DEG

PHOTO ILLUMINATION

SUN AZIM

103.46

DEG

PRINCIPAL POINT

LATITUDE

-0.26

DEG

LONGITUDE

-0.51

DEG

N.MI, SEC

LAT

-0.24

DEG

N.DEV.

SWING ANG

271.07

DEG

N.DEV.

TILT DISTANCE

3.1

N.DEV.

SIDF LENGTH

AB 4.5

KH

N.DEV.

CORNER COORDINATE

A LAT

0.04

DEG

N.DEV.

A LONG

-0.46

DEG

N.DEV.

B LAT

-0.59

DEG

N.DEV.

B LONG

-0.63

DEG

N.DEV.

C LAT

-0.55

DEG

N.DEV.

C LONG

-0.76

DEG

N.DEV.

D LAT

0.07

DEG

N.DEV.

D LONG

-0.62

DEG

N.DEV.

HIGH RESOLUTION

CORNER COORDINATE

A LAT

0.07

DEG

N.DEV.

A LONG

-0.62

DEG

N.DEV.

B LAT

-0.55

DEG

N.DEV.

B LONG

-0.75

DEG

N.DEV.

C LAT

-0.52

DEG

N.DEV.

C LONG

-0.91

DEG

N.DEV.

D LAT

0.10

DEG

N.DEV.

D LONG

-0.77

DEG

MISSION/

FRAME NO.

2136

YR, MO, DY

661122

HR, MI, SEC

234710.16

TIME

ALT

53.73

KH

S/C POSITION

ALT RT

0.1135

KM/SEC

S/C ORIENTATION

TILT ANG

2.39

DEG

PHOTO ILLUMINATION

SUN AZIM

90.28

DEG

PRINCIPAL POINT

LATITUDE

-0.26

DEG

LONGITUDE

-0.51

DEG

N.MI, SEC

LAT

-0.24

DEG

N.DEV.

SWING ANG

271.07

DEG

N.DEV.

TILT DISTANCE

3.1

DEG

N.DEV.

SIDF LENGTH

AB 4.5

KH

N.DEV.

CORNER COORDINATE

A LAT

0.04

DEG

N.DEV.

A LONG

-0.46

DEG

N.DEV.

B LAT

-0.59

DEG

N.DEV.

B LONG

-0.63

DEG

N.DEV.

C LAT

-0.55

DEG

N.DEV.

C LONG

-0.76

DEG

N.DEV.

D LAT

0.07

DEG

N.DEV.

D LONG

-0.62

DEG

N.DEV.

HIGH RESOLUTION

CORNER COORDINATE

A LAT

0.04

DEG

N.DEV.

A LONG

-0.46

DEG

N.DEV.

B LAT

-0.59

DEG

N.DEV.

B LONG

-0.63

DEG

N.DEV.

C LAT

-0.55

DEG

N.DEV.

C LONG

-0.76

DEG

N.DEV.

D LAT

0.07

DEG

N.DEV.

D LONG

-0.62

DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.2137
YR. MO. DY
HR, MI, SEC
030515.311

TIME 661123
 S/C POSITION ALT 51.10 KM
 ALT RT -0.0981 KM/SEC
 LAT 4.89 DEG
 LONG -27.18 DEG

S/C ORIENTATION TILT ANG 1.31 DEG
 TILT AZIM 283.0 DEG
 SWING ANG 91.82 DEG
 N.DEV. 348.63 DEG

PHOTO ILLUMINATION SUN AZIM 90.98 DEG
 INCID ANG 83.96 DEG
 EMISS ANG 1.35 DEG
 PHASE ANG 81.74 DEG
 ALPHA 1.32 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 5.46 DEG AB 41.4 KM
 A LONG -26.50 DEG BC 35.3 KM
 B LAT 4.12 DEG CD 42.1 KM
 B LONG -26.77 DEG DA 35.4 KM
 C LAT 4.34 DEG TILT DISTANCE 1.7
 C LONG -27.92 DEG
 D LAT 5.70 DEG
 D LONG -27.65 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 5.18 DEG AB 18.4 KM
 A LONG -27.08 DEG BC 4.6 KM
 B LAT 4.59 DEG CD 18.4 KM
 B LONG -27.20 DEG DA 4.6 KM
 C LAT 4.62 DEG TILT DISTANCE
 C LONG -27.35 DEG 13.9
 D LAT 5.21 DEG
 D LONG -27.23 DEG

MISSION/
FRAME NO.2138
YR. MO. DY
HR, MI, SEC
101115.02

TIME 661123
 S/C POSITION ALT 44.33 KM
 ALT RT 0.00530 KM/SEC
 LAT 1.25 DEG
 LONG -13.29 DEG

S/C ORIENTATION TILT ANG 1.13 DEG
 TILT AZIM 83.96 DEG
 SWING ANG 251.93 DEG
 N.DEV. 347.97 DEG

PHOTO ILLUMINATION SUN AZIM 90.99 DEG
 INCID ANG 65.51 DEG
 EMISS ANG 1.15 DEG
 PHASE ANG 65.65 DEG
 ALPHA -1.15 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.73 DEG AB 36.5 KM
 A LONG -12.63 DEG BC 30.5 KM
 B LAT 0.56 DEG CD 36.0 KM
 B LONG -12.89 DEG DA 30.8 KM
 C LAT 0.78 DEG TILT DISTANCE 1.6
 C LONG -13.87 DEG
 D LAT 1.94 DEG
 D LONG -13.63 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.49 DEG AB 16.0 KM
 A LONG -13.15 DEG BC 4.0 KM
 B LAT 0.98 DEG CD 15.9 KM
 B LONG -13.26 DEG DA 4.0 KM
 C LAT 1.01 DEG TILT DISTANCE
 C LONG -13.39 DEG 11.9
 D LAT 1.52 DEG
 D LONG -13.28 DEG

PRINCIPAL POINT
 LATITUDE 4.90 DEG
 LONGITUDE -27.21 DEG

PRINCIPAL POINT
 LATITUDE 1.25 DEG
 LONGITUDE -13.27 DEG

PRINCIPAL POINT
 LATITUDE 1.25 DEG
 LONGITUDE -13.27 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2135	ALT 44.4A KM ALT RT 0.0541 KM/SEC	TILT ANG 1.24 DEG TILT AZIM 95.71 DEG	SUN AZIM 90.98 DEG INCID ANG 65.39 DEG	LATITUDE 1.02 DEG LONGITUDE -13.14 DEG
YR, MO, DY	103:17:69	SWING ANG 253.68 DEG	EMISS ANG 1.27 DEG	
HR, MI, SEC	LAT 1.22 DEG LONG -13.16 DEG	N.DEV. 347.96 DEG	PHASE ANG 66.65 DEG	
			ALPHA -1.27 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.71 DEG	AB 36.5 KM
A LONG -12.51 DEG	BC 30.5 KM
B LAT 1.53 DEG	CD 36.0 KM
B LONG -12.76 DEG	DA 30.8 KM
C LAT 0.75 DEG	TILT DISTANCE 1.8
C LONG -13.75 DEG	
D LAT 1.91 DEG	C LONG -1.326 DEG
D LONG -13.59 DEG	D LAT 1.49 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.47 DEG	AB 15.0 KM
A LONG -13.02 DEG	BC 4.0 KM
B LAT 2.95 DEG	CD 16.0 KM
B LONG -13.13 DEG	DA 4.0 KM
C LAT 1.98 DEG	TILT DISTANCE 13.2
C LONG -1.326 DEG	
D LAT 1.49 DEG	D LONG -13.15 DEG

MISSION/

FRAME NO.

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2140	ALT 44.55 KM ALT RT 0.0551 KM/SEC	TILT ANG 1.36 DEG TILT AZIM 87.16 DEG	SUN AZIM 90.97 DEG INCID ANG 65.26 DEG	LATITUDE 1.020 DEG LONGITUDE -13.02 DEG
YR, MO, DY	103:18:59	SWING ANG 255.13 DEG	EMISS ANG 1.39 DEG	
HR, MI, SEC	LAT 1.19 DEG LONG -13.06 DEG	N.DEV. 347.96 DEG	PHASE ANG 66.55 DEG	
			ALPHA -1.39 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.68 DEG	AB 36.7 KM
A LONG -12.38 DEG	BC 32.7 KM
B LAT 1.50 DEG	CD 36.1 KM
B LONG -12.64 DEG	DA 30.9 KM
C LAT 1.72 DEG	TILT DISTANCE 1.9
C LONG -12.63 DEG	
D LAT 1.89 DEG	C LONG -3.14 DEG
D LONG -12.28 DEG	D LAT 1.47 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.44 DEG	AB 16.0 KM
A LONG -12.90 DEG	BC 4.0 KM
B LAT 0.92 DEG	CD 16.0 KM
B LONG -13.01 DEG	DA 4.0 KM
C LAT 0.95 DEG	TILT DISTANCE 14.4
C LONG -3.14 DEG	
D LAT 1.47 DEG	D LONG -13.03 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

2141 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 44.66 KM SUN AZIM 90.96 DEG LATITUDE 1.17 DEG
 HR, MI, SEC ALT RT 0.7561 KM/SEC TILT AZIM 88.39 DEG INCID ANG 65.14 DEG
 LAT 1.17 DEG SWING ANG 256.35 DEG EMISS ANG 1.52 DEG
 LONG -12.94 DEG N.DEV. 347.96 DEG PHASE ANG 56.65 DEG
 ALPHA -1.52 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.66 DEG AB 36.3 KM
 A LONG -12.26 DEG BC 30.8 KM
 B LAT 0.47 DEG CD 36.2 KM
 B LONG -12.51 DEG DA 31.0 KM
 C LAT 0.70 DEG TILT DISTANCE
 C LONG -13.50 DEG 2.1
 C LAT 1.86 DEG
 D LONG -13.26 DEG

S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 ALT 44.77 KM TILT ANG 1.60 DEG SUN AZIM 90.95 DEG LATITUDE 1.14 DEG
 ALT RT 0.0572 KM/SEC TILT AZIM 89.43 DEG INCID ANG 65.01 DEG
 LAT 1.14 DEG SWING ANG 257.39 DEG EMISS ANG 1.54 DEG
 LONG -12.82 DEG N.DEV. 347.96 DEG PHASE ANG 66.65 DEG
 ALPHA -1.64 DEG

MISSION/
FRAME NO.

2142 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 44.77 KM SUN AZIM 90.95 DEG LATITUDE 1.14 DEG
 HR, MI, SEC 101122.98 ALT RT 0.0572 KM/SEC TILT AZIM 89.43 DEG INCID ANG 65.01 DEG
 LAT 1.14 DEG SWING ANG 257.39 DEG EMISS ANG 1.54 DEG
 LONG -12.82 DEG N.DEV. 347.96 DEG PHASE ANG 66.65 DEG
 ALPHA -1.64 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.64 DEG AB 37.3 KM
 A LONG -12.13 DEG BC 30.9 KM
 B LAT 0.44 DEG CD 36.2 KM
 B LONG -12.39 DEG DA 31.1 KM
 C LAT 0.67 DEG TILT DISTANCE
 C LONG -13.38 DEG 2.3
 D LAT 1.84 DEG
 D LONG -13.14 DEG

S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 ALT 44.77 KM TILT ANG 1.60 DEG SUN AZIM 90.95 DEG LATITUDE 1.14 DEG
 ALT RT 0.0572 KM/SEC TILT AZIM 89.43 DEG INCID ANG 65.01 DEG
 LAT 1.14 DEG SWING ANG 257.39 DEG EMISS ANG 1.54 DEG
 LONG -12.82 DEG N.DEV. 347.96 DEG PHASE ANG 66.65 DEG
 ALPHA -1.64 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.42 DEG AB 16.1 KM
 A LONG -12.78 DEG BC 4.0 KM
 B LAT 0.90 DEG CD 16.0 KM
 B LONG -12.88 DEG DA 4.0 KM
 C LAT 0.93 DEG TILT DISTANCE
 C LONG -13.02 DEG 15.7
 D LAT 1.44 DEG
 D LONG -12.91 DEG

S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 ALT 44.77 KM TILT ANG 1.60 DEG SUN AZIM 90.95 DEG LATITUDE 1.14 DEG
 ALT RT 0.0572 KM/SEC TILT AZIM 89.43 DEG INCID ANG 65.01 DEG
 LAT 1.14 DEG SWING ANG 257.39 DEG EMISS ANG 1.54 DEG
 LONG -12.82 DEG N.DEV. 347.96 DEG PHASE ANG 66.65 DEG
 ALPHA -1.64 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.2143
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT RT 44.89 KM
0.0562 KM/SEC
LAT 1.12 DEG
LONG -12.69 DEG

S/C ORIENTATION
TILT ANG 1.72 DEG
TILT AZIM 90.33 DEG.
SWING ANG 258.29 DEG
N.DEV. 347.96 DEG

PHOTO ILLUMINATION
SUN AZIM 90.95 DEG
INCID ANG 64.89 DEG
EMISS ANG 1.76 DEG
PHASE ANG 66.65 DEG
ALPHA -1.76 DEG

PRINCIPAL POINT
LATITUDE 1.12 DEG
LONGITUDE -12.65 DEG

MISSION/
FRAME NO.2144
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT RT 45.00 KM
0.0593 KM/SEC
LAT 1.09 DEG
LONG -12.57 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 91.11 DEG
SWING ANG 259.07 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION
SUN AZIM 90.94 DEG
INCID ANG 64.76 DEG
EMISS ANG 1.89 DEG
PHASE ANG 66.65 DEG
ALPHA -1.89 DEG

PRINCIPAL POINT
LATITUDE 1.09 DEG
LONGITUDE -12.53 DEG

MISSION/
FRAME NO.2145
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT RT 45.00 KM
0.0593 KM/SEC
LAT 1.09 DEG
LONG -12.57 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 91.11 DEG
SWING ANG 259.07 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION
SUN AZIM 90.94 DEG
INCID ANG 64.76 DEG
EMISS ANG 1.89 DEG
PHASE ANG 66.65 DEG
ALPHA -1.89 DEG

PRINCIPAL POINT
LATITUDE 1.09 DEG
LONGITUDE -12.53 DEG

MISSION/
FRAME NO.2146
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT RT 45.00 KM
0.0593 KM/SEC
LAT 1.09 DEG
LONG -12.57 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 91.11 DEG
SWING ANG 259.07 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION
SUN AZIM 90.94 DEG
INCID ANG 64.76 DEG
EMISS ANG 1.89 DEG
PHASE ANG 66.65 DEG
ALPHA -1.89 DEG

PRINCIPAL POINT
LATITUDE 1.09 DEG
LONGITUDE -12.53 DEG

MISSION/
FRAME NO.2147
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT RT 45.00 KM
0.0593 KM/SEC
LAT 1.09 DEG
LONG -12.57 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 91.11 DEG
SWING ANG 259.07 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION
SUN AZIM 90.94 DEG
INCID ANG 64.76 DEG
EMISS ANG 1.89 DEG
PHASE ANG 66.65 DEG
ALPHA -1.89 DEG

PRINCIPAL POINT
LATITUDE 1.09 DEG
LONGITUDE -12.53 DEG

MISSION/
FRAME NO.2148
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT RT 45.00 KM
0.0593 KM/SEC
LAT 1.09 DEG
LONG -12.57 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 91.11 DEG
SWING ANG 259.07 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION
SUN AZIM 90.94 DEG
INCID ANG 64.76 DEG
EMISS ANG 1.89 DEG
PHASE ANG 66.65 DEG
ALPHA -1.89 DEG

PRINCIPAL POINT
LATITUDE 1.09 DEG
LONGITUDE -12.53 DEG

MISSION/
FRAME NO.2149
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT RT 45.00 KM
0.0593 KM/SEC
LAT 1.09 DEG
LONG -12.57 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 91.11 DEG
SWING ANG 259.07 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION
SUN AZIM 90.94 DEG
INCID ANG 64.76 DEG
EMISS ANG 1.89 DEG
PHASE ANG 66.65 DEG
ALPHA -1.89 DEG

PRINCIPAL POINT
LATITUDE 1.09 DEG
LONGITUDE -12.53 DEG

MISSION/
FRAME NO.2150
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT RT 45.00 KM
0.0593 KM/SEC
LAT 1.09 DEG
LONG -12.57 DEG

S/C ORIENTATION
TILT ANG 1.84 DEG
TILT AZIM 91.11 DEG
SWING ANG 259.07 DEG
N.DEV. 347.95 DEG

PHOTO ILLUMINATION
SUN AZIM 90.94 DEG
INCID ANG 64.76 DEG
EMISS ANG 1.89 DEG
PHASE ANG 66.65 DEG
ALPHA -1.89 DEG

PRINCIPAL POINT
LATITUDE 1.09 DEG
LONGITUDE -12.53 DEG

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MISSION/

FRAME NO.
2145
YR. MO. DY
HR. MIN. SEC
101123
101129.01

TIME
661123
ALT RT
0.0603 KM/SEC
LAT
1.07 DEG
LONG
-12.45 DEG
N.DEV.

S/C POSITION
45.12 KM
TILT AZIM. 91.80 DEG
SWING ANG 259.75 DEG
N.DEV. 347.95 DEG
"ALPHA" -2.01 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.55 DEG AB 37.3 KM
A LONG -11.75 DEG BC 31.1 KM
B LAT 0.36 DEG CD 36.4 KM
B LONG -12.01 DEG DA 31.3 KM
C LAT 0.59 DEG TILT DISTANCE
C LONG -13.01 DEG 2.8
D LAT 1.76 DEG
D LONG -12.77 DEG

S/C ORIENTATION
TILT ANG 1.96 DEG
INCID ANG 64.64 DEG
EMISS ANG 2.01 DEG
PHASE ANG 66.65 DEG
"ALPHA" -2.01 DEG

MISSION/

FRAME NO.
2146
YR. MO. DY
HR. MIN. SEC
661123
133625.02

TIME
661123
ALT RT -0.0535 KM/SEC
LAT
3.77 DEG
LONG
-27.47 DEG
N.DEV.

S/C POSITION
45.10 KM
TILT AZIM 275.47 DEG
SWING ANG 83.73 DEG
N.DEV. 348.26 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.26 DEG AB 36.6 KM
A LONG -26.86 DEG BC 31.2 KM
B LAT 3.97 DEG CD 37.0 KM
B LONG -27.11 DEG DA 31.2 KM
C LAT 3.28 DEG TILT DISTANCE
C LONG -28.12 DEG 1.2
D LAT 4.47 DEG
D LONG -27.87 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
INCID ANG 275.47 DEG
EMISS ANG 83.73 DEG
PHASE ANG 348.26 DEG
"ALPHA" 0.95 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.31 DEG AB 1.63 KM
A LONG -12.28 DEG BC 4.1 KM
B LAT 0.79 DEG CD 16.2 KM
B LONG -12.39 DEG DA 4.1 KM
C LAT 0.82 DEG TILT DISTANCE
C LONG -12.52 DEG
D LAT 1.34 DEG
D LONG -12.41 DEG

PHOTO ILLUMINATION
SUN AZIM 90.93 DEG
INCID ANG 64.64 DEG
EMISS ANG 2.01 DEG
PHASE ANG 66.65 DEG
"ALPHA" -2.01 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.02 DEG AB 16.2 KM
A LONG -27.37 DEG BC 4.1 KM
B LAT 3.49 DEG CD 16.2 KM
B LONG -27.48 DEG DA 4.1 KM
C LAT 3.52 DEG TILT DISTANCE
C LONG -27.61 DEG 9.8
D LAT 4.04 DEG
D LONG -27.51 DEG

PHOTO ILLUMINATION
SUN AZIM 91.19 DEG
INCID ANG 78.04 DEG
EMISS ANG 0.95 DEG
PHASE ANG 77.09 DEG
"ALPHA" 0.95 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 1.31 DEG AB 1.63 KM
A LONG -12.28 DEG BC 4.1 KM
B LAT 0.79 DEG CD 16.2 KM
B LONG -12.39 DEG DA 4.1 KM
C LAT 0.82 DEG TILT DISTANCE
C LONG -12.52 DEG
D LAT 1.34 DEG
D LONG -12.41 DEG

PHOTO ILLUMINATION
SUN AZIM 90.93 DEG
INCID ANG 64.64 DEG
EMISS ANG 2.01 DEG
PHASE ANG 66.65 DEG
"ALPHA" -2.01 DEG

LUNAR ORBITER SHOTOGRAPHIC SUPPORTING DATA

MISSION /

PAGE 175

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
661123	ALT 45.00' KH ALT RT -0.0524 KH/SEC	TILT ANG 0.81 DEG TILT AZIM 274°58' DEG SWING ANG 62.83 DEG N.DEV.	SUN AZIM 91.00 DEG INCID ANG 77.92 DEG EMISS ANG 0.83 DEG PHASE ANG 77.09 DEG	LATITUDE 3°74' DEG LONGITUDE -27.37 DEG
133427.00	LAT 3.74 DEG LONG -27.35 DEG			

MEDIUM	RESOLUTION	SIDE LENGTH
CORNER	COORDINATE	
A	LAT 4°23' DEG	AB 35.6 KM
A	LONG -26°54' DEG	BC 31.1 KM
B	LAT 3°05' DEG	CD 36.9 KM
B	LONG -26°59' DEG	DA 31.1 KM
C	LAT 3°25' DEG	TILT DISTANCE
C	LONG -27°59' DEG	1.0
D	LAT 4°45' DEG	
D	LONG -27°54' DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	3° 99' DEG	AB 15.0' KM
A LONG	-27° 25' DEG	BC 4° 1' KM
B LAT	3° 47' DEG	CD 15.0' KM
B LONG	-27° 36' DEG	DA 4° 1' KM
C LAT	3° 50' DEG	TILT DISTANC
C LONG	-27° 49' DEG	8.5
D LAT	4° 02' DEG	
D LONG	-27° 39' DEG	

FRAME NO. 148

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT			
661123 133428.98	ALT RT LAT LONG	44.89 KW -0.0514 KW/SEC 3.72 DEG -27.23 DEG	TILT ANG TILT AZIM SWING ANG N.ODEV.	0.69 DEG 273.38 DEG 81.62 DEG 348.24 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG	91.20 DEG 77.80 DEG 0.70 DEG 77.09 DEG	3.72 DEG -27.25 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	4°21 DEG	36.5 KM
A LONG	-26°62 DEG	31.0 KM
B LAT	3°03 DEG	35.8 KM
B LONG	-26°86 DEG	31.2 KM
C LAT	3°23 DEG	TILT DISTANCE
C LONG	-27°87 DEG	0.9
D LAT	4°44 DEG	
D LONG	-27°52 DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	3.97 DEG	AB 16.1 KM
A LONG	-27.13 DEG	BC 4.1 KM
B LAT	3.44 DEG	CD 16.1 KM
B LONG	-27.24 DEG	DA 4.1 KM
C LAT	3.47 DEG	TI LT DISTANCE
C LONG	-27.37 DEG	7.3
D LAT	3.99 DEG	
D LONG	27.46 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

2149 YR. MO. DY 661123 ALT 44.79 KM TILT ANG 0.57 DEG
 HR. MI. SEC 133630.95 ALT RT -0.0504 KM/SEC TILT AZIM 271.66 DEG
 LAT 3.69 DEG SWING ANG 79.90 DEG EMISS ANG 0.58 DEG
 LONG -27.11 DEG N.DEV. 348.23 DEG PHASE ANG 77.09 DEG
 ALPHA 0.58 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 4.18 DEG AB 36.5 KM
 A LONG -26.50 DEG BC 30.9 KM
 B LAT 3.00 DEG CD 36.7 KM
 B LONG -26.74 DEG DA 31.0 KM
 C LAT 3.21 DEG TILT DISTANCE 0.7
 C LONG -27.74 DEG D LAT 4.39 DEG
 D LAT -27.50 DEG D LONG -27.50 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 3.94 DEG AB 16.1 KM
 A LONG -27.01 DEG BC 4.0 KM
 B LAT 3.42 DEG CD 16.1 KM
 B LONG -27.12 DEG DA 4.0 KM
 C LAT 3.45 DEG TILT DISTANCE 6.0
 C LONG -27.25 DEG D LAT 3.97 DEG
 D LAT -27.14 DEG D LONG -27.14 DEG

MISSION/
FRAME NO.

2150 YR. MO. DY 661123 ALT 44.70 KM TILT ANG 0.45 DEG
 HR. MI. SEC 133632.93 ALT RT -0.0494 KM/SEC TILT AZIM 269.01 DEG
 LAT 3.67 DEG SWING ANG 77.24 DEG EMISS ANG 0.46 DEG
 LONG -26.99 DEG N.DEV. 348.23 DEG PHASE ANG 77.09 DEG
 ALPHA 0.46 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 4.15 DEG AB 36.4 KM
 A LONG -26.37 DEG BC 30.9 KM
 B LAT 2.98 DEG CD 36.6 KM
 B LONG -26.62 DEG DA 30.9 KM
 C LAT 3.18 DEG TILT DISTANCE 0.5
 C LONG -27.62 DEG D LAT 4.37 DEG
 D LONG -27.37 DEG D LONG -27.37 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 3.92 DEG AB 16.1 KM
 A LONG -26.88 DEG BC 4.0 KM
 B LAT 3.40 DEG CD 16.1 KM
 B LONG -26.99 DEG DA 4.0 KM
 C LAT 3.42 DEG TILT DISTANCE 4.7
 C LONG -27.12 DEG D LAT 3.94 DEG
 D LAT -27.02 DEG D LONG -27.02 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.20 DEG LATITUDE 3.69 DEG
 INCID ANG 77.67 DEG LONGITUDE -27.13 DEG
 EMISS ANG 0.58 DEG
 PHASE ANG 77.09 DEG
 ALPHA 0.58 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.21 DEG LATITUDE 3.67 DEG
 INCID ANG 77.55 DEG LONGITUDE -27.00 DEG
 EMISS ANG 0.46 DEG
 PHASE ANG 77.09 DEG
 ALPHA 0.46 DEG

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MISSION /

FRAME NO.

2151

TIME

661123

YR.MD.DY

133634.90

HR.MI.SEC

0.0483

KM/SEC

LAT RT

-0.0483

DEG

LAT

3.65

DEG

LONG

-26.87

DEG

N.DEV.

348.22

DEG

S/C POSITION

ALT

44.60

DEG

TILT

ANG

0.33

DEG

S/C ORIENTATION

ALT AZIM

264.47

DEG

TILT AZIM

77.43

DEG

EMISS ANG

0.34

DEG

PHASE ANG

77.05

DEG

ALPHA

0.34

DEG

MEDIUM RESOLUTION

CORNER COORDINATE

A LAT

4.13

DEG

AB

36.4

KH

C LAT

-26.25

DEG

BC

30.8

KH

D LAT

2.96

DEG

CD

36.5

KH

E LAT

-26.50

DEG

DA

30.8

KH

F LAT

3.16

DEG

TILT DISTANCE

G LAT

-27.49

DEG

H LAT

4.34

DEG

I LAT

-27.25

DEG

HIGH RESOLUTION

CORNER COORDINATE

A LAT

3.89

DEG

AB

16.0

KM

B LAT

-26.76

DEG

BC

4.0

KM

C LAT

-26.87

DEG

CD

16.0

KM

D LAT

3.40

DEG

TILT DISTANCE

E LAT

-27.00

DEG

F LAT

3.92

DEG

G LAT

-26.89

DEG

H LAT

-26.77

DEG

PHOTO ILLUMINATION

SUN AZIM

91.21

DEG

INCID ANG

77.43

DEG

EMISS ANG

0.34

DEG

PHASE ANG

77.05

DEG

ALPHA

0.34

DEG

PHOTO ILLUMINATION

SUN AZIM

91.21

DEG

INCID ANG

77.30

DEG

EMISS ANG

0.22

DEG

PHASE ANG

77.09

DEG

ALPHA

0.21

DEG

PHOTO ILLUMINATION

SUN AZIM

91.21

DEG

INCID ANG

77.30

DEG

EMISS ANG

0.22

DEG

PHASE ANG

77.09

DEG

ALPHA

0.21

DEG

MEDIUM RESOLUTION

CORNER COORDINATE

A LAT

4.10

DEG

AB

36.3

KH

C LAT

-26.13

DEG

BC

30.7

KH

D LAT

2.93

DEG

CD

36.4

KH

E LAT

-26.38

DEG

DA

30.8

KH

F LAT

3.14

DEG

TILT DISTANCE

G LAT

-27.37

DEG

H LAT

4.31

DEG

I LAT

-27.13

DEG

J LAT

-27.13

DEG

K LAT

-27.13

DEG

L LAT

-27.13

DEG

M LAT

-27.13

DEG

N LAT

-27.13

DEG

O LAT

-27.13

DEG

P LAT

-27.13

DEG

Q LAT

-27.13

DEG

R LAT

-27.13

DEG

S LAT

-27.13

DEG

T LAT

-27.13

DEG

U LAT

-27.13

DEG

V LAT

-27.13

DEG

W LAT

-27.13

DEG

X LAT

-27.13

DEG

Y LAT

-27.13

DEG

Z LAT

-27.13

DEG

AA LAT

-27.13

DEG

BB LAT

-27.13

DEG

CC LAT

-27.13

DEG

DD LAT

-27.13

DEG

EE LAT

-27.13

DEG

FF LAT

-27.13

DEG

GG LAT

-27.13

DEG

HH LAT

-27.13

DEG

II LAT

-27.13

DEG

JJ LAT

-27.13

DEG

KK LAT

-27.13

DEG

LL LAT

-27.13

DEG

MM LAT

-27.13

DEG

NN LAT

-27.13

DEG

OO LAT

-27.13

DEG

PP LAT

-27.13

DEG

QQ LAT

-27.13

DEG

RR LAT

-27.13

DEG

SS LAT

-27.13

DEG

TT LAT

-27.13

DEG

UU LAT

-27.13

DEG

VV LAT

-27.13

DEG

WW LAT

-27.13

DEG

XX LAT

-27.13

DEG

YY LAT

-27.13

DEG

ZZ LAT

-27.13

DEG

AA LAT

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MISSION /

FRAME NO.

2153

YR. MO. DY
HR. MI. SEC

TIME

661123

ALT RT -0.0463
LAT 3.60
LONG -26.64 DEGKH
SEC
DEGSWING ANG
N.DEV.
PHASE ANG
ALPHA0.02
36.51
0.12
77.09 DEG
0.09 DEGTILT ANG
TILT AZIM
EMISS ANG
INCID ANG91.21 DEG
77.18 DEG
0.12 DEG
77.09 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE
LONGITUDE3.60 DEG
-26.64 DEG

MISSION /

FRAME NO.

2154

YR. MO. DY
HR. MI. SEC

TIME

661123

ALT 43.92
LAT -0.0375
LONG -27.46 DEGKH
SEC
DEGTILT ANG
TILT AZIM
N.DEV.
PHASE ANG0.59 DEG
282.01 DEG
90.21 DEG
348.19 DEGSWING ANG
EMISS ANG
INCID ANG
PHASE ANG76.26 DEG
0.60 DEG
76.23 DEG
75.66 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE
LONGITUDE3.38 DEG
-27.48 DEG

CORNER COORDINATE

SIDE LENGTH

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

HIGH RESOLUTION

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
2155

YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
	661123	ALT 43.85 KM ALT RT -0.0365 KM/SEC	TILT ANG 0.47 DEG TILT AZIM 282.14 DEG SWING ANG 90.32 DEG N.DEV. 348.19 DEG	SUN AZIM 91.23 DEG INCID ANG 76.14 DEG EMISS ANG 0.48 DEG PHASE ANG 75.56 DEG ALPHA 0.47 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.83 DEG	AB .35.7 KM
A LONG -26.74 DEG	BC .30.3 KM
B LAT 2.67 DEG	CD .35.9 KM
B LONG -26.58 DEG	DA .30.3 KM
C LAT -2.88 DEG	TILT DISTANCE 0.6
C LONG -27.96 DEG	
D LAT 4.04 DEG	
D LONG -27.72 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.83 DEG	AB 3.59 KM
A LONG -26.74 DEG	BC 4.0 KM
B LAT 2.67 DEG	CD 15.8 KM
B LONG -26.58 DEG	DA 4.0 KM
C LAT -2.88 DEG	TILT DISTANCE 5.0
C LONG -27.96 DEG	
D LAT 4.04 DEG	
D LONG -27.72 DEG	

MISSION/
FRAME NO.
2156

YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
	661123	ALT 43.78 KM ALT RT -0.0355 KM/SEC	TILT ANG 0.35 DEG TILT AZIM 282.34 DEG SWING ANG 90.52 DEG N.DEV. 348.18 DEG	SUN AZIM 91.23 DEG INCID ANG 76.02 DEG EMISS ANG 0.36 DEG PHASE ANG 75.66 DEG ALPHA 0.36 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.80 DEG	AB .35.7 KM
A LONG -26.62 DEG	BC .30.2 KM
B LAT 2.65 DEG	CD .35.8 KM
B LONG -26.86 DEG	DA .30.3 KM
C LAT 2.85 DEG	TILT DISTANCE 0.4
C LONG -27.84 DEG	
D LAT 4.01 DEG	
D LONG -27.60 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.80 DEG	AB 3.57 KM
A LONG -26.62 DEG	BC 4.0 KM
B LAT 2.65 DEG	CD 15.7 KM
B LONG -26.86 DEG	DA 4.0 KM
C LAT 2.85 DEG	TILT DISTANCE 3.7
C LONG -27.84 DEG	
D LAT 4.01 DEG	
D LONG -27.60 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.83 DEG	AB 15.8 KM
A LONG -26.74 DEG	BC 4.0 KM
B LAT 2.67 DEG	CD 15.8 KM
B LONG -26.58 DEG	DA 4.0 KM
C LAT -2.88 DEG	TILT DISTANCE 5.0
C LONG -27.96 DEG	
D LAT 4.04 DEG	
D LONG -27.72 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.83 DEG	AB 15.7 KM
A LONG -26.74 DEG	BC 4.0 KM
B LAT 2.67 DEG	CD 15.7 KM
B LONG -26.58 DEG	DA 4.0 KM
C LAT -2.88 DEG	TILT DISTANCE 3.7
C LONG -27.96 DEG	
D LAT 4.04 DEG	
D LONG -27.72 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.83 DEG	AB 15.7 KM
A LONG -26.74 DEG	BC 4.0 KM
B LAT 2.67 DEG	CD 15.7 KM
B LONG -26.58 DEG	DA 4.0 KM
C LAT -2.88 DEG	TILT DISTANCE 5.0
C LONG -27.96 DEG	
D LAT 4.04 DEG	
D LONG -27.72 DEG	

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MISSION/
FRAME NO.

MISSION/ FRAME NO.	TIME YR.MD.DY HR.MI.SEC	S/C POSITION ALT RT -0.0345 KM/SEC	S/C ORIENTATION TILT ANG 0°23' DEG TILT AZIM 282°75' DEG SWING ANG. 90°92' DEG N.DEV. 348°17' DEG	PHOTO ILLUMINATION		PRINCIPAL POINT LATITUDE 3°30' DEG LONGITUDE -27°12' DEG	
				SIDE LENGTH	CORNER COORDINATE		
2157	661123 170535.62	ALT -43°72' KM LAT 3°30' DEG LONG. -27°12' DEG	TILT ANG 0°23' DEG TILT AZIM 282°75' DEG SWING ANG. 90°92' DEG N.DEV. 348°17' DEG	AB 35.7 KM BC 30.2 KM CD 35.7 KM DA 30.2 KM TILT DISTANCE 0.3	A LAT 3.78 DEG A LONG -26.80 DEG B LAT 2.63 DEG B LONG -26.75 DEG C LAT 2.83 DEG C LONG -27.72 DEG D LAT 3.58 DEG D LONG -27.48 DEG	PHOTO ILLUMINATION SUN AZIM 91°23' DEG INCID ANG 75°90' DEG EMISS ANG 0°24' DEG PHASE ANG 75°66' DEG ALPHA 0°24' DEG	PRINCIPAL POINT LATITUDE 3°30' DEG LONGITUDE -27°12' DEG

MISSION/
FRAME NO.

MISSION/ FRAME NO.	TIME YR.MD.DY HR.MI.SEC	S/C POSITION ALT RT -0.0335 KM/SEC	S/C ORIENTATION TILT ANG 0°11' DEG TILT AZIM 284°00' DEG SWING ANG 92°16' DEG N.DEV. 348°17' DEG	PHOTO ILLUMINATION		PRINCIPAL POINT LATITUDE 3°28' DEG LONGITUDE -27°00' DEG	
				SIDE LENGTH	CORNER COORDINATE		
2158	661123 170537.56	ALT -43°65' KM LAT 3°28' DEG LONG. -27°00' DEG	TILT ANG 0°11' DEG TILT AZIM 284°00' DEG SWING ANG 92°16' DEG N.DEV. 348°17' DEG	AB 35.5 KM BC 30.1 KM CD 35.7 KM DA 30.2 KM TILT DISTANCE 0.2	A LAT 3.75 DEG A LONG -26.38 DEG B LAT 2.60 DEG B LONG -26.63 DEG C LAT 2.81 DEG C LONG -27.60 DEG D LAT 3.56 DEG D LONG -27.36 DEG	PHOTO ILLUMINATION SUN AZIM 91°23' DEG INCID ANG 75°78' DEG EMISS ANG 0°12' DEG PHASE ANG 75°66' DEG ALPHA 0°12' DEG	PRINCIPAL POINT LATITUDE 3°28' DEG LONGITUDE -27°00' DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

2159
YR, MO, DY 661123
HR, MI, SEC 170539.51

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	43.59° KH	TILT ANG 0°	SUN AZIM 91°23' DEG	LATITUDE 3°25' DEG
ALT RT	-0.0325 KW/SEC	TILT AZIM 58°51' DEG	INCID ANG 75°66' DEG	LONGITUDE -26°08' DEG
LAT	3.25 DEG	SWING ANG 226°80' DEG	EMISS ANG 0° DEG	
LONG	-26.88 DEG	N.DEV. 348°16' DEG	PHASE ANG 75°66' DEG	
		ALPHA -0.01 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 3.73 DEG	AB 35.6 KM	CORNER COORDINATE SIDE LENGTH
A LONG -26.26 DEG	BC 30.1 KM	A LAT 3°49' DEG AB 15.7 KM
B LAT 2.58 DEG	CD 35.6 KM	A LONG -26.76 DEG BC 3.9 KM
B LONG -26.51 DEG	DA 30.1 KM	B LAT 2°99' DEG CD 15.7 KM
C LAT 2.78 DEG	TILT DISTANCE 0.1	B LONG -26.87 DEG DA 3.9 KM
C LONG -27.48 DEG		C LAT 3°01' DEG TILT DISTANCE 0.
D LAT 3.93 DEG		C LONG -27.00 DEG
D LONG -27.24 DEG		D LAT 3°52' DEG

MISSION/

FRAME NO.

2160
YR, MO, DY 661123
HR, MI, SEC 170541.47

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	43.52 KH	TILT ANG 0°13' DEG	SUN AZIM 91°24' DEG	LATITUDE 3°23' DEG
ALT RT	-0.0315 KW/SEC	TILT AZIM 99°36' DEG	INCID ANG 75°54' DEG	LONGITUDE -26°76' DEG
LAT	3.23 DEG	SWING ANG 267°51' DEG	EMISS ANG 0°13' DEG	
LONG	-26.76 DEG	N.DEV. 348°15' DEG	PHASE ANG 75°65' DEG	
		ALPHA -0.13 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 3.70 DEG	AB 35.6 KM	CORNER COORDINATE SIDE LENGTH
A LONG -26.14 DEG	BC 30.0 KM	A LAT 3°47' DEG AB 15.6 KM
B LAT 2.55 DEG	CD 35.5 KM	A LONG -26.64 DEG BC 3.9 KM
B LONG -26.38 DEG	DA 30.1 KM	B LAT 2°96' DEG CD 15.6 KM
C LAT 2.76 DEG	TILT DISTANCE	B LONG -26.75 DEG DA 3.9 KM
C LONG -27.35 DEG	0.2	C LAT 2.99 DEG TILT DISTANCE
D LAT 3.91 DEG		C LONG -26.88 DEG
D LONG -27.11 DEG		D LAT 3°49' DEG

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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.2161
YR.MD.DY
HR.MI.SEC
170543.45

S/C POSITION
 ALT 43.46 KM
 ALT RT -0.0304 KM/SEC
 LAT 3.21 DEG
 LONG -26.64 DEG
 N.DEV. 348.14 DEG

S/C ORIENTATION
 TILT ANG 0.25 DEG
 TILT AZIM 100.46 DEG
 SWING ANG 268.50 DEG
 N.DEV. 348.14 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 3.48 DEG AB 35.6 KM
 A LONG -26.92 DEG BC 30.0 KM
 B LAT 2.53 DEG CD 35.4 KM
 B LONG -26.26 DEG DA 30.1 KM
 C LAT 2.74 DEG TILT DISTANCE
 C LONG -27.23 DEG 0.4
 D LAT 3.88 DEG
 D LONG -26.99 DEG

MISSION/
FRAME NO.
2162
YR.MD.DY
HR.MI.SEC
000542.70

S/C POSITION
 ALT 45.91 KM
 ALT RT 0.0587 KM/SEC
 LAT 0.98 DEG
 LONG -20.01 DEG
 N.DEV. 356.64 DEG

S/C ORIENTATION
 TILT ANG 69.40 DEG
 TILT AZIM 0.18 DEG
 SWING ANG 177.31 DEG
 N.DEV. 356.64 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 10.38 DEG AB 20.7 KM
 A LONG -16.55 DEG BC 44.2 KM
 B LAT 2.61 DEG CD 74.2 KM
 B LONG -19.32 DEG DA 126.0 KM
 C LAT 2.71 DEG TILT DISTANCE
 C LONG -20.78 DEG 13.7
 D LAT 7.66 DEG
 D LONG -22.16 DEG

PHOTO ILLUMINATION
 SUN AZIM 91.24 DEG
 INCID ANG 75.41 DEG
 EMISS ANG 0.25 DEG
 PHASE ANG 75.66 DEG
 ALPHA -0.25 DFG

PRINCIPAL POINT
 LATITUDE 3.20 DEG
 LONGITUDE -26.64 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 3.44 DEG AB 15.6 KM
 A LONG -26.52 DEG BC 3.9 KM
 B LAT 2.94 DEG CD 15.6 KM
 B LONG -26.63 DEG DA 3.9 KM
 C LAT 2.97 DEG TILT DISTANCE
 C LONG -26.75 DEG 2.6
 D LAT 3.47 DEG
 D LONG -26.65 DEG

PHOTO ILLUMINATION
 SUN AZIM 92.96 DEG
 INCID ANG 65.35 DEG
 EMISS ANG 73.90 DEG
 PHASE ANG 80.91 DEG
 ALPHA -53.75 DEG

PRINCIPAL POINT
 LATITUDE 5.48 DEG
 LONGITUDE -20.00 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 13.03 DEG AB 276.2 KM
 A LONG -19.33 DEG BC 8.3 KM
 B LAT 3.61 DEG CD 93.9 KM
 B LONG -19.89 DEG DA 50.1 KM
 C LAT 3.64 DEG TILT DISTANCE
 C LONG -20.16 DEG 21.9
 D LAT 12.80 DEG
 D LONG -20.45 DEG

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2163	YR, MO, DY HR, MI, SEC	661124 070350+0.09	ALT RT LAT LONG	50.91 KM 0.0895 KM/SEC 0.19 DEG -20.13 DEG	TIILT ANG 1.33 DEG TIILT AZIM 108.91 DEG SWING ANG 276.57 DEG N.DEV. 347.67 DEG	SUN AZIM 90.55 DEG INCID ANG 61.76 DEG EMISS ANG 1.37 DEG PHASE ANG 63.06 DEG ALPHA -1.30 DEG
MEDIUM RESOLUTION						
MISSION/ FRAME NO.		CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION		
2163	YR, MO, DY HR, MI, SEC	A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	0.72 DEG -15.37 DEG -0.63 DEG -15.66 DEG -0.37 DEG -20.80 DEG 0.96 DEG -20.50 DEG	AB 42.0 KM BC 35.2 KM CD 41.3 KM DA 35.2 KM TIILT DISTANCE 1.8	CORNER COORDINATE A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	SIDE LENGTH AB 18.3 KM BC 4.6 KM CD 18.3 KM DA 4.6 KM TIILT DISTANCE 14.1
MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2164	YR, MO, DY HR, MI, SEC	661124 070352+0.34	ALT RT LAT LONG	51.11 KM 0.0906 KM/SEC 0.16 DEG -20.00 DEG	TIILT ANG 1.47 DEG TIILT AZIM 108.25 DEG SWING ANG 275.91 DEG N.DEV. 347.67 DEG	SUN AZIM 90.54 DEG INCID ANG 61.62 DEG EMISS ANG 1.51 DEG PHASE ANG 63.06 DEG ALPHA -1.44 DEG
MEDIUM RESOLUTION						
MISSION/ FRAME NO.		CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION		
2164	YR, MO, DY HR, MI, SEC	A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	0.70 DEG -19.22 DEG -0.66 DEG -19.22 DEG -0.40 DEG -20.66 DEG 0.94 DEG -20.37 DEG	AB 42.2 KM BC 35.4 KM CD 41.4 KM DA 35.4 KM TIILT DISTANCE 2.0	CORNER COORDINATE A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	SIDE LENGTH AB 18.4 KM BC 4.6 KM CD 18.4 KM DA 4.6 KM TIILT DISTANCE 15.6

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION /

FRAME NO.

TIME

YR.MD.DY
HR.MI.SEC

S/C POSITION

ALT 51°32' KM
ALT RT 0.0917 KM/SEC
LAT 3.13 DEG
LONG -19.86 DEG

S/C ORIENTATION

TILT ANG 1°61' DEG

TILT AZIM 107°70' DEG

SWING ANG 275°36' DEG

NDEV* 347°67' DEG

PHASE ANG 63°06' DEG

ALPHA -1°58' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0°47' DEG	AB 42.4 KM
A LONG -15°08' DEG	BC 35.5 KM
B LAT -0°59' DEG	CD 41.5 KM
B LONG -19°38' DEG	DA 35.5 KM
C LAT -0°43' DEG	TILT DISTANCE 2.2
C LONG -20°52' DEG	
D LAT 0°51' DEG	
D LONG -20°23' DEG	

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0°40' DEG

A LONG -19.68 DEG

B LAT -0°20' DEG

B LONG -19.81 DEG

C LAT -0°17' DEG

C LONG -19.96 DEG

D LAT 0°43' DEG

D LONG -19.83 DEG

PHOTO ILLUMINATION

SUN AZIM 90°52' DEG

INCID ANG 61°48' DEG

EMISS ANG 1°65' DEG

PHASE ANG 63°06' DEG

ALPHA -1°58' DEG

PRINCIPAL POINT

LATITUDE 0°11' DEG

LONGITUDE -19.82' DEG

PHOTO ILLUMINATION

SUN AZIM 90°50' DEG

INCID ANG 61°34' DEG

EMISS ANG 1°80' DEG

PHASE ANG 63°06' DEG

ALPHA -1°72' DEG

PRINCIPAL POINT

LATITUDE 0°08' DEG

LONGITUDE -19.68' DEG

MISSION /

FRAME NO.

TIME

YR.MD.DY
HR.MI.SEC

S/C POSITION

ALT 51°53' KM
ALT RT 0.0929 KM/SEC
LAT 0°10' DEG
LONG -19.73 DEG

S/C ORIENTATION

TILT ANG 1°75' DEG

TILT AZIM 107°23' DEG

SWING ANG 274°90' DEG

NDEV* 347°67' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0°55' DEG	AB 42.6 KM
A LONG -18°94' DEG	BC 35.7 KM
B LAT -0°73' DEG	CD 41.7 KM
B LONG -19°24' DEG	DA 35.7 KM
C LAT -0°45' DEG	TILT DISTANCE 2.4
C LONG -20°38' DEG	
D LAT 0°88' DEG	
D LONG -20°09' DEG	

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 0°37' DEG

A LONG -19.54' DEG

B LAT -0°23' DEG

B LONG -19.67' DEG

C LAT -0°20' DEG

C LONG -19.82' DEG

D LAT 0°40' DEG

D LONG -19.69' DEG

PHOTO ILLUMINATION

SUN AZIM 90°50' DEG

INCID ANG 61°34' DEG

EMISS ANG 1°80' DEG

PHASE ANG 63°06' DEG

ALPHA -1°72' DEG

PRINCIPAL POINT

LATITUDE 0°08' DEG

LONGITUDE -19.68' DEG

PHOTO ILLUMINATION

SUN AZIM 90°50' DEG

INCID ANG 61°34' DEG

EMISS ANG 1°80' DEG

PHASE ANG 63°06' DEG

ALPHA -1°72' DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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ME NO.	TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		YR.MD.DY	HR.MI.SEC	ALT	KN	TILT ANG	DEG	SUN AZIM	DEG
7	61124	0.0941	070359.21	51.75	RT	1.89	DEG	90.49	DEG
				0.07	RT	106.83	DEG	61.19	DEG
				0.07	LAT	274.49	DEG	EMISS. ANG	1.94 DEG
				-19.59	LONG	347.67	DEG	PHASE ANG	63.06 DEG
					N.DEV.				

MEASURE	REDUCTION	SIDE	LENGTH
CORNER	COORDINATE	AB	42.8 KM
A LAT	0.62 DEG	BC	35.8 KM
A LONG	-18.79 DEG	CD	41.8 KM
B LAT	-0.76 DEG	DA	35.8 KM
B LONG	-19.99 DEG	C LAT	-0.49 DEG
C LAT		C LONG	-20.24 DEG
C LONG		D LAT	0.65 DEG
D LONG		D LONG	-18.95 DEG

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	TILT DISTANCE
A LAT	0.34 DEG	AB 18.6 KM	
A LONG	-19.39 DEG	BC 4.7 KM	
B LAT	-0.26 DEG	CD 18.6 KM	
B LONG	-19.52 DEG	DA 4.7 KM	
C LAT	-0.23 DEG		20.0
C LONG	-19.67 DEG		
D LAT	0.37 DEG		
D LONG	-19.54 DEG		

S/C GREENATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 1.89 DEG	SUN AZIM 90.49 DEG	LATITUDE 0.05 DEG
TILT AZIM 106.83 DEG	INCID ANG 61.19 DEG	LONGITUDE -1.9.53 DEG
SWING ANG 274.49 DEG	EMISS ANG 1.94 DEG	
N.DEV: 347.67 DEG	PHASE ANG 63.06 DEG	
	ALPHA -1.87 DEG	

HIGH RESOLUTION

CORNER • COORDINATE	SIDE LENGTH	TILT DISTANCE
A LAT 0.34 DEG	AB 18.6 KM	
A LONG -19.39 DEG	BC 4.7 KM	
B LAT -0.26 DEG	CD 18.6 KM	
B LONG -19.52 DEG	DA 4.7 KM	
C LAT -0.23 DEG		20.0
C LONG -19.67 DEG		
D LAT 0.37 DEG		
D LONG -19.54 DEG		

MISSION

LINE NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1	661124	ALT 51.97 ALT RT 0.0953 LAT 0.04 LONG -19.45	KH TILT ANG 2.63 TILT AZIM 106.49 SWING ANG 274.15 N.DEV.	SUN AZIM 90.47 DEG INCID ANG 61.05 DEG EMISS ANG 2.09 DEG PHASE ANG 63.06 DEG	LATITUDE 0.02 DEG LONGITUDE -19.39 DEG
2	0704 1.53				ANNUAL 2.21 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	0-59 DEG	AB 43.1 K
A LONG	-18.64 DEG	BC 36.3 K
B LAT	-0-80 DEG	CD 42.0 K
B LONG	-18.55 DEG	DA 36.0 K
C LAT	-6.52 DEG	TILT DISTANCE
C LONG	-20-10 DEG	2.8
D LAT	C-83 DEG	
D LONG	-15.81 DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	AB .18.7 KM
A LAT	0.31 DEG	BC 4.7 KM
A LONG	-19.25 DEG	CD 18.7 KM
B LAT	-0.29 DEG	DA 4.7 KM
B LONG	-19.38 DEG	TILT DISTANCE 21.5
C LAT	-0.26 DEG	
C LONG	-19.53 DEG	
D LAT	0.24 DEG	
D LONG	-19.40 DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	0°31' DEG	AB .18.7 KM
A LONG	-19°25' DEG	BC 4.7 KM
B LAT	-0°29' DEG	CD 18.7 KM
B LONG	-19°38' DEG	DA 4.7 KM
C LAT	-0°26' DEG	TILT DISTANCE
C LONG	-19°53' DEG	21.5
D LAT	0°34' DEG	
D LONG	-19°40' DEG	

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MISSION/

FRAME NO.

2169

YR, MO, DY.
HR, MI, SECTIME
661124
0704 3.87

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	52.19 KM	TILT ANG	2.17 DEG	SUN AZIM	90.46 DEG	LATITUDE	-0.01 DEG
ALT, RT	0.0964 KM/SEC	TILT AZIM	106.18 DEG	INCID ANG	60.91 DEG	LONGITUDE	-19.225 DEG
LAT	0.01 DEG	SWING ANG	273.84 DEG	EMISS ANG	2.23 DEG		
LONG	-19.31 DEG	N.DEV.	347.67 DEG	PHASE ANG	63.06 DEG		
				ALPHA	-2.15 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	
A LAT	C 56 DEG	AB	43.3 KM
A LONG	-18.49 DEG	BC	36.2 KM
B LAT	-0.83 DEG	CD	42.1 KM
B LONG	-18.80 DEG	DA	36.2 KM
C LAT	-0.56 DEG	TILT DISTANCE	
C LONG	-15.96 DEG	3.9	
D LAT	0.80 DEG		
D LONG	-15.66 DEG		

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH	
A LAT	0.28 DEG	AB	18.8 KM
A LONG	-19.10 DEG	BC	4.7 KM
B LAT	-0.33 DEG	CD	18.7 KM
B LONG	-19.24 DEG	DA	4.7 KM
C LAT	-0.29 DEG	TILT DISTANCE	
C LONG	-19.39 DEG	23.0	
D LAT	0.31 DEG		
D LONG	-19.26 DEG		

MISSION/

FRAME NO.

2170

YR, MO, DY.
HR, MI, SECTIME
661124
0704 6.23

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	52.42 KM	TILT ANG	2.31 DEG	SUN AZIM	90.44 DEG	LATITUDE	-0.04 DEG
ALT, RT	0.0976 KM/SEC	TILT AZIM	105.92 DEG	INCID ANG	60.76 DEG	LONGITUDE	-19.19 DEG
LAT	-0.02 DEG	SWING ANG	273.58 DEG	EMISS ANG	2.38 DEG		
LONG	-19.17 DEG	N.DEV.	347.67 DEG	PHASE ANG	63.06 DEG		
				ALPHA	-2.30 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	
A LAT	0.54 DEG	AB	43.5 KM
A LONG	-18.34 DEG	BC	36.3 KM
B LAT	-0.87 DEG	CD	42.3 KM
B LONG	-18.65 DEG	DA	36.3 KM
C LAT	-0.59 DEG	TILT DISTANCE	
C LONG	-15.82 DEG	3.2	
D LAT	0.77 DEG		
D LONG	-19.52 DEG		

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH	
A LAT	0.25 DEG	AB	18.9 KM
A LONG	-18.96 DEG	BC	4.7 KM
B LAT	-0.36 DEG	CD	18.8 KM
B LONG	-19.09 DEG	DA	4.7 KM
C LAT	-0.32 DEG	TILT DISTANCE	
C LONG	-19.24 DEG	24.6	
D LAT	0.26 DEG		
D LONG	-19.11 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/10/71

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MISSION/

FRAME NO.

2171
YR, MO, DY
HR, MI, SEC . 103254.40TIME
661124S/C POSITION
ALT RT 0.1049 KM/SEC

TILT AZIM 104.24 DEG

SWING ANG 271.94 DEG

N.DEV. 347.71 DEG

INCID ANG 60.00 DEG

EMIS ANG 2.01 DEG

PHASE ANG 51.95 DEG

ALPHA 1.95 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.36 DEG AB 4.9 KM

A LONG -19.33 DEG BC 37.5 KM

B LAT -1.09 DEG CD 43.8 KM

B LONG -15.64 DEG DA 37.5 KM

C LAT -0.81 DEG TILT DISTANCE 2.7

C LONG -20.65 DEG

D LAT 0.60 DEG

D LONG -20.54 DEG

S/C ORIENTATION
TILT ANG 1.95 DEG
TILT AZIM 104.24 DEG
SWING ANG 271.94 DEG
N.DEV. 347.71 DEGPHOTO ILLUMINATION
SUN AZIM 90.33 DEG

INCID ANG 60.00 DEG

EMIS ANG 2.01 DEG

PHASE ANG 51.95 DEG

ALPHA 1.95 DEG

MISSION/

FRAME NO.

2172
YR, MO, DY
HR, MI, SEC . 103256.83TIME
661124S/C POSITION
ALT RT 0.1062 KM/SEC

TILT AZIM 104.07 DEG

SWING ANG 271.77 DEG

N.DEV. 347.71 DEG

INCID ANG 59.85 DEG

EMIS. ANG 2.16 DEG

PHASE ANG 51.95 DEG

ALPHA 2.10 DEG

S/C ORIENTATION
TILT ANG 2.09 DEG
TILT AZIM 104.07 DEG
SWING ANG 271.77 DEG
N.DEV. 347.71 DEGPHOTO ILLUMINATION
SUN AZIM 90.31 DEG

INCID ANG 59.85 DEG

EMIS. ANG 2.16 DEG

PHASE ANG 51.95 DEG

ALPHA 2.10 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.05 DEG AB 19.5 KM

A LONG -19.95 DEG BC 4.9 KM

B LAT -9.57 DEG CD 19.5 KM

B LONG -20.09 DEG DA 4.9 KM

C LAT -9.53 DEG TILT DISTANCE 20.7

C LONG -20.25 DEG

D LAT 0.09 DEG

D LONG -20.11 DEG

PHOTO ILLUMINATION
SUN AZIM 90.31 DEG

INCID ANG 59.85 DEG

EMIS. ANG 2.16 DEG

PHASE ANG 51.95 DEG

ALPHA 2.10 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.03 DEG AB 19.6 KM

A LONG -19.81 DEG BC 4.9 KM

B LAT -0.60 DEG CD 19.5 KM

B LONG -19.94 DEG DA 4.9 KM

C LAT -0.56 DEG TILT DISTANCE 22.3

C LONG -20.10 DEG

D LAT 0.07 DEG

D LONG -19.97 DEG

PHOTO ILLUMINATION
SUN AZIM 90.31 DEG

INCID ANG 59.85 DEG

EMIS. ANG 2.16 DEG

PHASE ANG 51.95 DEG

ALPHA 2.10 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

2173 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 54.79 KM TILT ANG 2.24 DEG SUN AZIM 90.30 DEG LATITUDE -0.30 DEG
 HR, MI, SEC 103259.28 ALT RT 0.1074 KM/SEC TILT AZIM 103.92 DEG INCID ANG 59.70 DEG LONGITUDE -19.80 DEG
 LAT -0.28 DEG SWING ANG 271.52 DEG EMISS ANG 2.31 DEG
 LONG -19.87 DEG N,DEV. 347.71 CEG PHASE ANG 61.95 DEG
 ALPHA -2.25 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 0.30 DEG AB 45.4 KM
 A LONG -19.02 DEG BC 37.9 KM
 B LAT -1.16 DEG CD 44.1 KM
 B LONG -19.34 DEG DA 37.9 KM
 C LAT -0.88 DEG TILT DISTANCE 3.1
 C LONG -20.55 DEG 3.1
 D LAT 0.55 DEG
 D LONG -20.24 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.00 DEG AB 19.7 KM
 A LONG -19.68 DEG BC 5.0 KM
 B LAT -0.63 DEG CD 19.6 KM
 B LONG -19.79 DEG DA 5.0 KM
 C LAT -0.60 DEG TILT DISTANCE
 C LONG -19.95 DEG 23.8
 D LAT 0.03 DEG
 D LONG -19.81 DEG

MISSION/
FRAME NO.

2174 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 54.95 KM TILT ANG 2.39 DEG SUN AZIM 90.28 DEG LATITUDE -0.33 DEG
 HR, MI, SEC 1033 1.74 ALT RT 0.1085 KM/SEC TILT AZIM 103.79 DEG INCID ANG 59.55 DEG LONGITUDE -19.65 DEG
 LAT -0.31 DEG SWING ANG 271.49 DEG EMISS ANG 2.47 DEG
 LONG -19.73 DEG N,DEV. 347.72 CEG PHASE ANG 61.95 DEG
 ALPHA -2.40 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 6.27 DEG AB 45.7 KM
 A LONG -18.86 DEG BC 38.1 KM
 B LAT -1.20 DEG CB 44.3 KM
 B LONG -19.18 DEG DA 38.1 KM
 C LAT -0.91 DEG TILT DISTANCE 3.3
 C LONG -20.40 DEG
 D LAT 0.52 DEG
 D LONG -20.09 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -0.03 DEG AB 19.8 KM
 A LONG -19.50 DEG BC 5.0 KM
 B LAT -0.67 DEG CD 19.7 KM
 B LONG -19.64 DEG DA 5.0 KM
 C LAT -0.63 DEG TILT DISTANCE
 C LONG -19.80 DEG 25.4
 D LAT 0.00 DEG
 D LONG -19.66 DEG

MISSION/
FRAME NO.

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 54.95 KM TILT ANG 2.39 DEG SUN AZIM 90.28 DEG LATITUDE -0.33 DEG
 HR, MI, SEC 1033 1.74 ALT RT 0.1085 KM/SEC TILT AZIM 103.79 DEG INCID ANG 59.55 DEG LONGITUDE -19.65 DEG
 LAT -0.31 DEG SWING ANG 271.49 DEG EMISS ANG 2.47 DEG
 LONG -19.73 DEG N,DEV. 347.72 CEG PHASE ANG 61.95 DEG
 ALPHA -2.40 DEG

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MISSION /
ERAHF NO.

CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
2175	YR: NO.DY FR: MI.SEC	TIME 661124 1C33 4.21	S/C POSITION ALT ALT RT LAT LONG	S/C ORIENTATION TILT ANG TILT AZIM SWING ANG NDEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG	PRINCIPAL POINT LATITUDE LONGITUDE
			55.23 KH 0.1099 KM/SEC -0.34 DEG -19.58 DEG	2.5A DEG 103.58 DEG 271.38 DEG 347.72 DEG	90.26 DEG 59.40 DEG 2.63 DEG 61.95 DEG	-n.36 DEG -1.9.50 DEG
					ALPHA	-2.56 DEG

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 0-24 DEG	AB 46.0 KM	A LAT -0.06 DEG	AB 19.9 KM
A LONG -18.70 DEG	BC 38.3 KM	A LONG -19.35 DEG	BC 5.0 KM
B LAT -1.24 DEG	CB 44.5 KM	B LAT -0.70 DEG	CD 19.8 KM
B LONG -19.03 DEG	DA 36.3 KM	B LONG -19.49 DEG	DA 5.0 KM
C LAT -0-94 DEG	TILT DISTANCE	C LAT -0-66 DEG	TILT DISTANCE
C LONG -20.25 DEG	3.6	C LONG -19.65 DEG	
D LAT C*49 DEG		D LAT -0-03 DEG	
D LONG -15.54 DEG		D LONG -19.51 DEG	

MISSION/
FRAME NO.
2176 YR. NO
1976

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
661124	ALT ALT RT	55.51 KM 0.1111 KM/SEC	TILT ANG TILT AZIM 103.57 DEG	SUN AZIM 90.24 DEG INCID ANG 59.24 DEG
1033 5.70	LAT LONG	-0.37 DEG -19.43 DEG	SWING ANG 271.28 DEG N.DEV. 347.72 DEG	EMISS ANG 2.78 DEG PHASE ANG 81.95 DEG
				ALPHA -2.71 DEG

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT C-21 DEG	AB 46.2 KM	A LAT -0.09 DEG	AB 20.0 KM
A LONG -18.54 DEG	BC 38.5 KM	A LONG -19.20 DEG	BC 5.0 KM
B LAT -1.27 DEG	CD 44.7 KM	B LAT -0.73 DEG	CD 19.9 KM
B LONG -18.87 DEG	DA 38.5 KM	B LONG -19.34 DEG	DA 5.0 KM
C LAT -0.58 DEG	TILT DISTANCE	C LAT -0.70 DEG	TILT DISTANCE
C LONG -2C.8 DEG	3.8	C LONG -19.50 DEG	28.7
D LAT C.46 DEG		D LAT -0.36 DEG	
D LONG -19.79 DEG		D LONG -19.36 DEG	

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MISSION/
FRAME NO.2177
YR MO DY
HR MI SEC
661124
1033 9.20

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 55.79 KM	TILT ANG 2.85 DEG	SUN AZIM 90.22 DEG	LATITUDE -0.43 DEG
YR MO.DY	ALT RT 0.1124 KM/SEC	TILT AZIM 103.48 DEG	INCID ANG 59.09 DEG	LONGITUDE -19.19 DEG
HR MI SEC	LAT -0.41 DEG	SWING ANG 271.19 DEG	EMIS ANG 2.94 DEG	
	LONG -19.28 DEG	N.DEV. 347.72 DEG	PHASE ANG 61.95 DEG	
			ALPHA -2.87 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C.19 DEG	AB 46.5 KM
A LONG -18.38 DEG	BC 38.7 KM
B LAT -1.31 DEG	CD 44.9 KM
B LONG -18.71 DEG	DA 38.7 KM
C LAT -1.01 DEG	TILT DISTANCE 4.2
C LONG -15.95 DEG	
D LAT C.43 DEG	
D LONG -19.64 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.12 DEG	AB 20.1 KM
A LONG -19.04 DEG	BC 5.1 KM
B LAT -0.77 DEG	CD 20.9 KM
B LONG -19.18 DEG	DA 5.1 KM
C LAT -0.73 DEG	TILT DISTANCE 30.3
C LONG -19.35 DEG	
D LAT -0.09 DEG	
D LONG -19.21 DEG	

MISSION/
FRAME NO.2178
YR MO DY
HR MI SEC
661124
103211.72

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 56.07 KM	TILT ANG 3.00 DEG	SUN AZIM 90.20 DEG	LATITUDE -0.46 DEG
YR MO.DY	ALT RT 0.1136 KM/SEC	TILT AZIM 103.40 DEG	INCID ANG 58.93 DEG	LONGITUDE -19.04 DEG
HR MI SEC	LAT -0.44 DEG	SWING ANG 271.10 DEG	EMIS ANG 3.00 DEG	
	LONG -19.13 DEG	N.DEV. 347.73 DEG	PHASE ANG 61.95 DEG	
			ALPHA -3.02 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.16 DEG	AB 46.8 KM
A LONG -18.22 DEG	BC 38.9 KM
B LAT -1.35 DEG	CD 45.1 KM
B LONG -18.55 DEG	DA 38.9 KM
C LAT -1.05 DEG	TILT DISTANCE 4.2
C LONG -19.80 DEG	
D LAT 0.40 DEG	
D LONG -19.48 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.15 DEG	AB 20.2 KM
A LONG -18.89 DEG	BC 5.1 KM
B LAT -0.80 DEG	CD 20.1 KM
B LONG -19.03 DEG	DA 5.1 KM
C LAT -0.77 DEG	TILT DISTANCE 31.9
C LONG -19.19 DEG	
D LAT -0.12 DEG	
D LONG -19.05 DEG	

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PAGE 1.91

MISSION/
FRAME NO.2179
YR. MO. DY
HR. MI. SEC

S/C POSITION
ALT RT -0.6016 KM/SEC
LAT 2.42 DEG
LONG -34.45 DEG

S/C ORIENTATION
TILT ANG 0.69 DEG
TILT AZIM 106.96 DEG
SWING ANG 274.90 DEG
N.DEV. 347.94 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.91 DEG AB 37.1 KM
A LONG -33.80 DEG BC 31.2 KM
B LAT 1.71 DEG CD 36.8 KM
B LONG -34.05 DEG DA 31.3 KM
C LAT 1.53 DEG TILT DISTANCE 0.8
C LONG -25.06 DEG
D LAT 3.12 DEG
D LONG -34.81 DEG

S/C POSITION
ALT 45.20 KM
TILT ANG 0.69 DEG
TILT AZIM 106.96 DEG
SWING ANG 274.90 DEG
N.DEV. 347.94 DEG

MISSION/
FRAME NO.
2180
YR. MO. DY
HR. MI. SEC

S/C POSITION
ALT RT -0.0006 KM/SEC
LAT 2.40 DEG
LONG -34.34 DEG

S/C ORIENTATION
TILT ANG 0.71 DEG
TILT AZIM 106.07 DEG
SWING ANG 274.00 DEG
N.DEV. 347.93 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.88 DEG AB 37.1 KM
A LONG -23.67 DEG BC 31.2 KM
B LAT 1.69 DEG CD 36.7 KM
B LONG -23.53 DEG DA 31.3 KM
C LAT 1.51 DEG TILT DISTANCE 1.0
C LONG -24.54 DEG
D LAT 3.09 DEG
D LONG -34.68 DEG

S/C POSITION
ALT 45.19 KM
TILT ANG 0.71 DEG
TILT AZIM 106.07 DEG
SWING ANG 274.00 DEG
N.DEV. 347.93 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.67 DEG AB 16.3 KM
A LONG -34.32 DEG BC 4.1 KM
B LAT 2.14 DEG CD 16.2 KM
B LONG -34.43 DEG DA 4.1 KM
C LAT 2.17 DEG TILT DISTANCE 6.2
C LONG -34.56 DEG
D LAT 2.69 DEG
D LONG -34.45 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 2.67 DEG AB 16.3 KM
A LONG -34.32 DEG BC 4.1 KM
B LAT 2.14 DEG CD 16.2 KM
B LONG -34.43 DEG DA 4.1 KM
C LAT 2.17 DEG TILT DISTANCE 6.2
C LONG -34.56 DEG
D LAT 2.69 DEG
D LONG -34.45 DEG

PHOTO ILLUMINATION
SUN AZIM 91.19 DEG
INCID ANG 72.64 DEG
EMISS ANG 0.60 DEG
PHASE ANG 73.22 DEG
ALPHA -0.58 DEG

PHOTO ILLUMINATION
SUN AZIM 91.18 DEG
INCID ANG 72.52 DEG
EMISS ANG 0.72 DEG
PHASE ANG 73.22 DEG
ALPHA -0.70 DEG

PHOTO ILLUMINATION
SUN AZIM 91.18 DEG
INCID ANG 72.52 DEG
EMISS ANG 0.72 DEG
PHASE ANG 73.22 DEG
ALPHA -0.70 DEG

PHOTO ILLUMINATION
SUN AZIM 91.18 DEG
INCID ANG 72.52 DEG
EMISS ANG 0.72 DEG
PHASE ANG 73.22 DEG
ALPHA -0.70 DEG

PHOTO ILLUMINATION
SUN AZIM 91.18 DEG
INCID ANG 72.52 DEG
EMISS ANG 0.72 DEG
PHASE ANG 73.22 DEG
ALPHA -0.70 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
2181

TIME
661124
YR, MO, DY
1358 4.63
HR, MI, SEC

S/C POSITION
ALT RT 45.19 KM
0.0014 KM/SEC
LAT 2.37 DEG
LONG -34.22 DEG

S/C ORIENTATION
TILT ANG 0.83 DEG
TILT AZIM 105.44 DEG
SWING ANG 273.37 DEG
N.DEV. 347.93 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.86 DEG AB 37.1 KM
A LONG -33.55 DEG BC 31.2 KM
B LAT 1.66 DEG CD 36.7 KM
B LONG -33.81 DEG DA 31.3 KM
C LAT 1.88 DEG TILT DISTANCE 1.2
C LONG -34.82 DEG
D LAT 2.07 DEG
D LONG -34.56 DEG

PHOTO ILLUMINATION
SUN AZIM 91.18 DEG
INCID ANG 72.40 DEG
EMISS ANG 0.85 DEG
PHASE ANG 73.22 DEG
ALPHA -0.82 DEG

PRINCIPAL POINT
LATITUDE 2.37 DEG
LONGITUDE -34.20 DEG

MISSION/
FRAME NO.
2182

TIME
661124
YR, MO, DY
1358 6.55
HR, MI, SEC

S/C POSITION
ALT RT 45.19 KM
0.0014 KM/SEC
LAT 2.35 DEG
LONG -34.10 DEG

S/C ORIENTATION
TILT ANG 0.95 DEG
TILT AZIM 104.97 DEG
SWING ANG 272.90 DEG
N.DEV. 347.92 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.83 DEG AB 37.1 KM
A LONG -33.53 DEG BC 31.2 KM
B LAT 1.64 DEG CD 36.7 KM
B LONG -33.69 DEG DA 31.3 KM
C LAT 1.86 DEG TILT DISTANCE 1.3
C LONG -34.89 DEG
D LAT 2.04 DEG
D LONG -34.44 DEG

PHOTO ILLUMINATION
SUN AZIM 91.18 DEG
INCID ANG 72.28 DEG
EMISS ANG 0.97 DEG
PHASE ANG 73.22 DEG
ALPHA -0.94 DEG

PRINCIPAL POINT
LATITUDE 2.34 DEG
LONGITUDE -34.08 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.62 DEG AB 16.3 KM
A LONG -34.07 DEG BC 4.1 KM
B LAT 2.09 DEG CD 16.2 KM
B LONG -34.19 DEG DA 4.1 KM
C LAT 2.12 DEG TILT DISTANCE 8.7
C LONG -34.32 DEG
D LAT 2.64 DEG
D LONG -34.21 DEG

PHOTO ILLUMINATION
SUN AZIM 91.18 DEG
INCID ANG 72.40 DEG
EMISS ANG 0.85 DEG
PHASE ANG 73.22 DEG
ALPHA -0.82 DEG

PRINCIPAL POINT
LATITUDE 2.37 DEG
LONGITUDE -34.20 DEG

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MISSION /

FRAME NO.

2183 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 661124 ALT 45.20 KM TILT ANG 1.07 DEG SUN AZIM 91.18 DEG
 YR.MD.DY ALT RT 0.0024 KM/SEC TILT AZIM 104.61 DEG INCID ANG 72.15 DEG
 HR.MI.SEC LAT 2.32 DEG SWING ANG 272.53 DEG EMISS ANG 1.09 DEG
 LONG -33.98 DEG N.DEV. 347.92 DEG PHASE ANG 73.22 DEG
 ALPHA +1.07 DFG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.81 DEG	AB 37.2 KM
A LONG -23.31 DEG	BC 31.2 KM
B LAT 1.61 DEG	CD 36.7 KM
B LONG -33.57 DEG	DA 31.3 KM
C LAT 1.83 DEG	TILT DISTANCE 1.5
C LONG -34.57 DEG	
D LAT 2.02 DEG	C LONG -34.98 DEG 1.1
D LONG -34.32 DEG	D LAT 2.59 DEG D LONG -33.96 DEG

MISSION /

FRAME NO.

2184 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 661124 ALT 45.20 KM TILT ANG 1.19 DEG SUN AZIM 91.32 DEG
 YR.MD.DY ALT RT 0.0035 KM/SEC TILT AZIM 104.32 DEG INCID ANG 72.03 DEG
 HR.MI.SEC LAT 2.30 DEG SWING ANG 272.24 DEG EMISS ANG 1.22 DEG
 LONG -33.86 DEG N.DEV. 347.92 DEG PHASE ANG 73.22 DEG
 ALPHA -1.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.78 DEG	AB 37.2 KM
A LONG -33.19 DEG	BC 31.2 KM
B LAT 1.58 DEG	CD 36.7 KM
B LONG -33.44 DEG	DA 31.3 KM
C LAT 1.81 DEG	TILT DISTANCE 1.7
C LONG -34.45 DEG	
D LAT 2.59 DEG	C LONG -33.96 DEG 1.2
D LONG -34.20 DEG	D LAT 2.57 DEG D LONG -33.84 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.57 DEG	AB 16.3 KM
A LONG -33.83 DEG	BC 4.1 KM
B LAT 2.04 DEG	CD 16.2 KM
B LONG -33.94 DEG	DA 4.1 KM
C LAT 2.07 DEG	TILT DISTANCE 1.1
C LONG -34.08 DEG	
D LAT 2.59 DEG	C LONG -33.96 DEG 1.1
D LONG -33.96 DEG	D LAT 2.57 DEG D LONG -33.84 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.54 DEG	AB 16.3 KM
A LONG -33.71 DEG	BC 4.1 KM
B LAT 2.02 DEG	CD 16.2 KM
B LONG -33.82 DEG	DA 4.1 KM
C LAT 2.04 DEG	TILT DISTANCE 1.2
C LONG -33.96 DEG	
D LAT 2.57 DEG	C LONG -33.96 DEG 1.2
D LONG -33.84 DEG	D LAT 2.57 DEG D LONG -33.84 DEG

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PRINCIPAL POINT

LATITUDE

LONGITUDE

N. DEG

E. DEG

SWING ANG

INCID ANG

EMISS ANG

PHASE ANG

ALPHA

DEG

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FRAME NO.

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S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

N. DEG

E. DEG

SWING ANG

INCID ANG

EMISS ANG

PHASE ANG

ALPHA

DEG

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FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

N. DEG

E. DEG

SWING ANG

INCID ANG

EMISS ANG

PHASE ANG

ALPHA

DEG

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FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

N. DEG

E. DEG

SWING ANG

INCID ANG

EMISS ANG

PHASE ANG

ALPHA

DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION /

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

N. DEG

E. DEG

SWING ANG

INCID ANG

EMISS ANG

PHASE ANG

ALPHA

DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION /

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

N. DEG

E. DEG

SWING ANG

INCID ANG

EMISS ANG

PHASE ANG

ALPHA

DEG

LUNAR CRITERIA PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER:

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NAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1197	161124	ALT ALT RT LAT LONG	45.70 0.0150 2.00 -34.39	TILT ANG TILT AZIM SWING ANG N.DEV.	SUN AZIM INCID ANG EMISS ANG PHASE ANG
	1727 5.13		1.03 0.90-0.98 2.68-0.82 347.84	DEG DEG DEG DEG	91.13 DEG 70.79 DEG 1.06 DEG 71.84 DEG
					1.99 DEG -34.36 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	2.49 DEG	AB .37.5 K
A LONG	-22.71 DEG	BC .31.5 K
B LAT	1.28 DEG	CD .37.1 K
B LONG	-32.97 DEG	DA .71.5 K
C LAT	1.51 DEG	TIKT DISTANCE
C LONG	-34.99 DEG	1.5
D LAT	2.47 DEG	
D LONG	-24.73 DEG	

HIGH RESOLUTION	
CORNER	COORDINATE
A LAT	2.24 DEG
A LONG	-34.24 DEG
B LAT	1.71 DEG
B LONG	-34.35 DEG
C LAT	1.74 DEG
C LONG	-34.48 DEG
D LAT	2.27 DEG
D LONG	-34.37 DEG

HIGH RESOLUTION		
ORNER COORDINATE	SIDE LENGTH	
LAT	2.24 DEG	AB 16.4 KM
LONG	-34.24 DEG	BC 4.1 KM
LAT	1.71 DEG	CD 16.4 KM
LONG	-34.35 DEG	DA 4.1 KM
LAT	1.74 DEG	TIILT DISTANCE
LONG	-34.48 DEG	11.0
LAT	2.27 DEG	
LONG	-34.37 DEG	

15510X

FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION
1186	661124 YR, MO, DY HR, MI, SEC	ALT 45°.73 ALT RT 0.2161 LAT 1°.97 LONG -34.227	KM KM/SEC DEG DEG TILT ANG 1.16 TILT AZIM 101.07 SWING ANG 268.91 N.DEV. 347.84
1187	1727 E.13		

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE	AB	KH
A LAT	2.47	DEG
A LONG	-33.58	DEG
B LAT	1.25	DEG
B LONG	-33.46	DEG
C LAT	1.48	DEG
C LONG	-34.66	DEG
D LAT	2.68	DEG
D LONG	-34.61	DEG

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	2.22 DEG	AB 16.5 KM
A LONG	-34.11 DEG	BC 4.1 KM
B LAT	1.69 DEG	CD 16.4 KM
B LONG	-34.21 DEG	DA 4.1 KM
C LAT	1.72 DEG	TILT DISTANCE 12.3
C LONG	-34.36 DEG	
D LAT	2.45 DEG	
D LONG	-34.25 DEG	

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PHOTO	ILLUMINATION	PRINCIPAL POINT
SUN AZIM	91.13 DEG	LATITUDE 1.99 DEG
INCID. ANG	70.79 DEG	LONGITUDE -34.36 DEG
EMISS. ANG	1.06 DEG	
PHASE ANG	71.84 DEG	
PHASE ANG	71.84 DEG	

HIGH RESOLUTION		
ORNER COORDINATE	SIDE LENGTH	
LAT	2.24 DEG	AB 16.4 KM
LONG	-34.24 DEG	BC 4.1 KM
LAT	1.71 DEG	CD 16.4 KM
LONG	-34.35 DEG	DA 4.1 KM
LAT	1.74 DEG	TILT DISTANCE
LONG	-34.48 DEG	11.0
LAT	2.27 DEG	
LONG	-34.37 DEG	

PRINCIPAL POINT
LATITUDE 1-97 DEG
LONGITUDE -34.24 DEG

HIGH RESOLUTION		SIDE LENGTH
VERTEX	COORDINATE	
LAT	2.22 DEG	AB 16.5 KM
LONG	-34.11 DEG	BC 4.1 KM
LAT	1.59 DEG	CD 16.4 KM
LONG	-34.23 DEG	DA 4.1 KM
LAT	1.72 DEG	TILT DISTANCE
LONG	-34.36 DEG	12.3
LAT	2.25 DEG	
LONG	-34.25 DEG	

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FRAME NO. 1

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT	TILT ANG	SUN AZIM	LATITUDE
YR. NO. DY	45.77 KM	1.28 DEG	91.13 DEG	1° 94 DEG
HR. MI. SEC	0.0171 KM/SEC	TILT AZIM	INCID ANG	LONGITUDE
	LAT	101.15 DEG	70.35 DEG	-34.12 DEG
	1.95 DEG	SWING ANG	EMISS ANG	
	-34.15 DEG	268.98 DEG	1.31 DEG	
		N.DEG*	PHASE ANG	
		347.83 DEG	71.84 DEG	
				ALPHA
				-1° 29 DEG

MEDICAL EDUCATION

CORNER COORDINATE		SIDE LENGTH	SIDE LENGTH	SIDE LENGTH
CORNER	COORDINATE			
A	LAT 2.44 DEG LONG -23.46 DEG	AB 37.7 KM	AB 16.5 KM	AB 16.5 KM
B	LAT 1.23 DEG LONG -33.72 DEG	BC 31.6 KM	BC 4.1 KM	BC 4.1 KM
C	LAT 1.46 DEG LONG -34.74 DEG	CD 37.1 KM	CD 4.1 KM	CD 4.1 KM
D	LAT 2.65 DEG LONG -34.48 DEG	DA 31.7 KM	DA 4.1 KM	DA 4.1 KM
		TILT DISTANCE 1.8	TILT DISTANCE 1.8	TILT DISTANCE 1.8
		D LONG -34.12 DEG	D LAT 2.22 DEG	C LONG -34.24 DEG
		D LONG -34.12 DEG	C LAT 1.69 DEG	B LONG -33.99 DEG
		D LONG -34.12 DEG	B LAT 3.66 DEG	A LONG 2.19 DEG
		D LONG -34.12 DEG	B LONG -34.11 DEG	A LAT

MISSION

E N O.	T I M E	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		YR, MO, DY	HR, MIN, SEC	ALT	RT	TILT ANG	1.40 DEG	SUN AZIM	91.12 DEG
4	661124	45.80	KM			TILT ANG	1.40 DEG	INCID ANG	70.42 DEG
	172712.04	0.0181	KM/SEC			TILT AZIM	101.21 DEG	EMISS ANG	1.44 DEG
		1.92	DEG			SWING ANG	269.04 DEG	PHASE ANG	71.84 DEG
		-34.03	DEG	N-DEV.				ALPHA	-1.41 DEG

CORNER COORDINATE RESOLUTION

CORNER COORDINATE	CORNER COORDINATE	SIDE LENGTH	SIDE LENGTH
A LAT 2.42 DEG	AB 37.8 KM	A LAT 2.17 DEG	AB 16.5 KM
A LONG -33.34 DEG	BC 31.6 KM	A LONG -33.87 DEG	BC 4.1 KM
B LAT 1.20 DEG	CD 37.1 KM	B LAT 1.64 DEG	CD 16.4 KM
B LONG -33.60 DEG	DA 31.7 KM	B LONG -33.98 DEG	DA 4.1 KM
C LAT 1.43 DEG	TILT DISTANCE 2.0	C LAT 1.67 DEG	TILT DISTANCE 14.8
C LONG -34.62 DEG		C LONG -34.12 DEG	
D LAT 2.63 DEG		D LAT 2.20 DEG	
D LONG -34.36 DEG		D LONG -34.00 DEG	

CORNER	COORDINATE	SIDE LENGTH
A LAT	2.1° DEG	AB 16.5 KM
A LONG	-33.87 DEG	BC 4.1 KM
B LAT	1.64 DEG	CD 16.4 KM
B LONG	-33.98 DEG	DA 4.1 KM
C LAT	1.67 DEG	TILT DISTANCE
C LONG	-34.12 DEG	14.8
D LAT	2.20 DEG	
D LONG	-34.09 DEG	

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2191	YR, MO, DY HR, MI, SEC	661124 172714.02	ALT RT 0.0191 KM/SEC LAT 1.90 DEG LONG -33.91 DEG	ALT 45.84 KM TILT ANG 1.52 DEG TILT AZIM 101.26 DEG SWING ANG 269.38 DEG N.DEV. 347.83 DEG	SUN AZIM 91.12 DEG INCID ANG 70.30 DEG EMISS. ANG 1.56 DEG PHASE ANG 71.84 DEG ALPHA -1.54 DEG	LATITUDE 1.89 DEG LONGITUDE -33.87 DEG
MEDIUM RESOLUTION						
MISSION/ FRAME NO.		TIME	SIDE LENGTH	HIGH RESOLUTION		
2191	YR, MO, DY HR, MI, SEC	661124 172714.02	A LAT 2.39 DEG A LONG -33.21 DEG B LAT 1.17 DEG B LONG -23.48 DEG C LAT 1.40 DEG C LONG -34.50 DEG D LAT 2.00 DEG D LONG -34.24 DEG	AB 37.8 KM BC 31.7 KM CD 37.1 KM DA 31.7 KM TILT DISTANCE 2.1	CORNER COORDINATE A LAT 2.14 DEG A LONG -33.75 DEG B LAT 1.61 DEG B LONG -33.86 DEG C LAT 1.64 DEG C LONG -34.00 DEG D LAT 2.17 DEG D LONG -33.88 DEG	SIDE LENGTH AB 16.5 KM BC 4.1 KM CD 16.5 KM DA 4.1 KM TILT DISTANCE 16.1
HIGH RESOLUTION						
2192	YR, MO, DY HR, MI, SEC	661124 172716.01	ALT RT 0.0202 KM/SEC LAT 1.87 DEG LONG -33.79 DEG	S/C POSITION ALT 45.89 KM TILT ANG 1.64 DEG TILT AZIM 101.30 DEG SWING ANG 269.12 DEG N.DEV. 347.82 DEG	PHOTO ILLUMINATION SUN AZIM 91.11 DEG INCID ANG 70.18 DEG EMISS. ANG 1.69 DEG PHASE ANG 71.84 DEG ALPHA -1.66 DEG	PRINCIPAL POINT LATITUDE 1.87 DEG LONGITUDE -33.75 DEG
MEDIUM RESOLUTION						
2192	YR, MO, DY HR, MI, SEC	661124 172716.01	A LAT 2.37 DEG A LONG -33.79 DEG B LAT 1.15 DEG B LONG -23.25 DEG C LAT 1.38 DEG C LONG -34.37 DEG D LAT 2.58 DEG D LONG -24.12 DEG	AB 37.9 KM BC 31.7 KM CD 37.1 KM DA 31.8 KM TILT DISTANCE 2.3	CORNER COORDINATE A LAT 2.12 DEG A LONG -33.62 DEG B LAT 1.59 DEG B LONG -33.74 DEG C LAT 1.61 DEG C LONG -33.87 DEG D LAT 2.15 DEG D LONG -33.76 DEG	SIDE LENGTH AB 16.5 KM BC 4.1 KM CD 16.5 KM DA 4.1 KM TILT DISTANCE 17.4

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MISSION/

FRAME NO.

2193 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 45°.92 KM TILT ANG 1°.77 DEG SUN AZIM 91°.11 DEG LATITUDE 1°.84 DEG
 H, M, SEC ALT RT 0.0212 KM/SEC TILT AZIM 101°.34 DEG INCID ANG 70°.05 DEG LONGITUDE -33°.62 DEG
 LAT 1°.85 DEG SWING ANG 2.69°.16 DEG EMISS ANG 1°.81 DEG
 LONG -33.67 DEG N.DEV. 347°.82° DEG PHASE ANG 71°.84 DEG
 ALPHA -1°.78 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 2°.34 DEG	AB 38.0 KM	CORNER COORDINATE SIDE LENGTH
A LONG -32.56 DEG	BC 31.7 KM	A LAT 2.09 DEG AB 16.5 KM
B LAT 1°.12 DEG	CD 37.1 KM	A LONG -33°.50 DEG BC 4°.2 KM
B LONG -33°.23 DEG	DA 31.8 KM	B LAT 1°.56 DEG CD 16.5 KM
C LAT 1°.35 DEG	TILT DISTANCE 2.5	B LONG -33°.61 DEG DA 4°.2 KM
C LONG -34°.25 DEG		C LAT 1°.59 DEG TILT DISTANCE 18.8
D LAT 2°.55 DEG		C LONG -33°.75 DEG 18.8
D LONG -33°.59 DEG		D LAT 2°.12 DEG

MISSION/

2194 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 45°.96 KM TILT ANG 1°.89 DEG SUN AZIM 91°.10 DEG LATITUDE 1°.81 DEG
 H, M, SEC ALT RT 0°.0223 KM/SEC TILT AZIM 101°.38 DEG INCID ANG 69°.93 DEG LONGITUDE -33°.50 DEG
 LAT 1°.82 DEG SWING ANG 2.69°.19 DEG EMISS ANG 1°.94 DEG
 LONG -33.55 DEG N.DEV. 347°.82 DEG PHASE ANG 71°.84 DEG
 ALPHA -1°.91 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 2°.32 DEG	AB 38.0 KM	CORNER COORDINATE SIDE LENGTH
A LONG -32°.84 DEG	BC 31°.8 KM	A LAT 2.07 DEG AB 16.6 KM
B LAT 1°.09 DEG	CD 37.1 KM	A LONG -33°.38 DEG BC 4°.2 KM
B LONG -33°.10 DEG	DA 31°.8 KM	B LAT 1°.53 DEG CD 16.5 KM
C LAT 1°.33 DEG	TILT DISTANCE 2.6	B LONG -33°.49 DEG DA 4°.2 KM
C LONG -34°.13 DEG		C LAT 1°.56 DEG TILT DISTANCE 20.1
D LAT 2°.52 DEG		C LONG -33°.63 DEG
D LONG -33°.87 DEG		D LAT 2.09 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91°.11 DEG LATITUDE 1°.84 DEG
 INCID ANG 70°.05 DEG LONGITUDE -33°.62 DEG
 EMISS ANG 1°.81 DEG
 PHASE ANG 71°.84 DEG
 ALPHA -1°.78 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91°.10 DEG LATITUDE 1°.81 DEG
 INCID ANG 69°.93 DEG LONGITUDE -33°.50 DEG
 EMISS ANG 1°.94 DEG
 PHASE ANG 71°.84 DEG
 ALPHA -1°.91 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91°.10 DEG LATITUDE 1°.81 DEG
 INCID ANG 69°.93 DEG LONGITUDE -33°.50 DEG
 EMISS ANG 1°.94 DEG
 PHASE ANG 71°.84 DEG
 ALPHA -1°.91 DEG

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MISSION/

FRAME NO.

2195 YR.MO.DY

04/25/71

HR.MI.SEC

S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION		
	TIME	ALT	TILT ANG	1.02 DEG	SUN AZIM	91°16 DEG	LATITUDE	2°83 DEG
2195	661125	47°73 KM	TILT AZIM	85.20 DEG	INCID ANG	75.55 DEG	LONGITUDE	-42°71 DEG
		ALT RT -0.6249 KM/SEC	SWING ANG	253°23 DEG	EMISS ANG	1°05 DEG		
		LAT -2°83 DEG	N.DEV.	348.03 DEG	PHASE ANG	76.70 DEG		
		LONG -42°74 DEG			ALPHA	-1°04 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION	
A LAT	3°25 DEG	AB 39.2 KM	CORNER COORDINATE	SIDE LENGTH
A LONG	-42°33 DEG	BC 32.9 KM	A LAT	3.09 DEG AB 17.2 KM
B LAT	2°58 DEG	CD 38.8 KM	A LONG	-42°58 DEG BC 4.3 KM
B LONG	-42°30 DEG	DA 33.1 KM	B LAT	2°54 DEG CD 17.1 KM
C LAT	2°32 DEG	TILT DISTANCE 1.5	B LONG	-42°70 DEG DA 4.3 KM
C LONG	-42°37 DEG		C LAT	2°57 DEG TILT DISTANCE 10.8
D LAT	3°57 DEG		C LONG	-42°84 DEG
D LONG	-42°10 DEG		D LAT	3°12 DEG

MISSION/

FRAME NO.

2196 YR.MO.DY

04/25 4.9:

HR.MI.SEC

S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION		
	TIME	ALT	TILT ANG	0.15 DEG	SUN AZIM	272°76 DEG	LATITUDE	-8°84 DEG
2196	661125	1519.00 KM	TILT AZIM	236.55 DEG	INCID ANG	70.16 DEG	LONGITUDE	100.56 DEG
		ALT RT 0.2534 KM/SEC	SWING ANG	233°83 DEG	EMISS ANG	0°28 DEG		
		LAT -8.77 DEG	N.DEV.	177.27 DEG	PHASE ANG	70.39 DEG		
		LONG 1C°.6B DEG			ALPHA	-0°23 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION	
A LAT	-32°35 DEG	AB 486.0 KM	CORNER COORDINATE	SIDE LENGTH
A LONG	72°54 DEG	BC 241.3 KM	A LAT	-17°90 DEG AB 354.3 KM
B LAT	17°76 DEG	CD 476.3 KM	A LONG	97°69 DEG BC 179.3 KM
B LONG	75°69 DEG	DA 254.5 KM	B LAT	0.45 DEG CD 554.1 KM
C LAT	15°56 DEG	TILT DISTANCE C.3	B LONG	98°70 DEG DA 139°4 KM
C LONG	122°48 DEG		C LAT	0.23 DEG TILT DISTANCE 1.6
D LAT	-24°55 DEG		C LONG	103.29 DEG
C LONG	124°80 DEG		D LAT	-18°13 DEG

PRINCIPAL POINT

SUN AZIM	LATITUDE	LONGITUDE
91°16 DEG	2°83 DEG	-42°71 DEG
70.16 DEG	-8°84 DEG	100.56 DEG
70.39 DEG	-0°23 DEG	

SIDE LENGTH	SIDE LENGTH
AB 17.2 KM	AB 17.2 KM
BC 4.3 KM	BC 4.3 KM
CD 17.1 KM	CD 17.1 KM
DA 4.3 KM	DA 4.3 KM
TILT DISTANCE 10.8	TILT DISTANCE 10.8
DA 139°4 KM	DA 139°4 KM
CD 554.1 KM	CD 554.1 KM
BC 179.3 KM	BC 179.3 KM
AB 354.3 KM	AB 354.3 KM
TILT DISTANCE 1.6	TILT DISTANCE 1.6
102.52 DEG	102.52 DEG

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MISSION/
FRAME NO.2197
YR, MO, DY
HR, MI, SEC

TIME
561125
ALT RT
0.6121 KM/SEC
LAT 1.90 DEG
LONG -42.1A DEG

S/C POSITION
ALT 47.93 KM
TILT ANG 0.59 DEG
TILT AZIM 111.14 DEG
SWING ANG 279.62 DEG
N.DEV. 347.88 DEG

S/C ORIENTATION
TILT ANG 0.59 DEG
TILT AZIM 111.14 DEG
SWING ANG 279.62 DEG
N.DEV. 347.88 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.41 DEG AB 39.3 KM
A LONG -41.49 DEG BC 33.4 KM
B LAT 1.14 DEG CD 39.3 KM
B LONG -41.74 DEG DA 32.1 KM
C LAT 1.78 DEG TILT DISTANCE
C LONG -42.03 DEG 5.8
D LAT 2.54 DEG
D LONG -42.56 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 2.15 DEG AB 17.2 KM

A LONG -42.04 DEG BC 4.3 KM

B LAT 1.60 DEG CD 17.2 KM

B LONG -42.16 DEG DA 4.3 KM

C LAT 1.53 DEG TILT DISTANCE

C LONG -42.30 DEG 6.2

D LAT 2.18 DEG

D LONG -42.18 DEG

MISSION/
FRAME NO.2198
YR, MO, DY
HR, MI, SEC

TIME
561125
ALT RT
0.6215 KM/SEC
LAT 1.87 DEG
LONG -42.05 DEG

S/C POSITION
ALT 47.92 KM
TILT ANG 0.72 DEG
TILT AZIM 114.48 DEG
SWING ANG 277.35 DEG
N.DEV. 347.87 DEG

S/C ORIENTATION
TILT ANG 0.72 DEG
TILT AZIM 114.48 DEG
SWING ANG 277.35 DEG
N.DEV. 347.87 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.39 DEG AB 39.3 KM
A LONG -41.36 DEG BC 33.4 KM
B LAT 1.12 DEG CD 39.3 KM
B LONG -41.63 DEG DA 32.1 KM
C LAT 1.35 DEG TILT DISTANCE
C LONG -42.70 DEG 1.1
D LAT 2.51 DEG
D LONG -42.43 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 2.13 DEG AB 17.2 KM

A LONG -41.91 DEG BC 4.3 KM

B LAT 1.57 DEG CD 17.2 KM

B LONG -42.03 DEG DA 4.3 KM

C LAT 1.65 DEG TILT DISTANCE

C LONG -42.17 DEG 7.6

D LAT 2.16 DEG

D LONG -42.05 DEG

PRINCIPAL POINT
LATITUDE 1.89 DEG
LONGITUDE -42.17 DEG

PRINCIPAL POINT
LATITUDE 1.85 DEG
LONGITUDE -42.04 DEG

PHOTO ILLUMINATION

SUN AZIM 91.75 DEG

INCID ANG 71.57 DEG

EMISS ANG 0.61 DEG

PHASE ANG 72.14 DEG

ALPHA -0.57 DEG

PHOTO ILLUMINATION

SUN AZIM 91.75 DEG

INCID ANG 71.55 DEG

EMISS ANG 0.76 DEG

PHASE ANG 72.04 DEG

ALPHA -0.74 DEG

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MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2199	66112S	ALT 47.95 KM	TILT ANG 2.84 DEG	SUN AZIM 91.07 DEG	LATITUDE 1.84 DEG
YR, MO, DY	072117.23	ALT RT 0.0143 KM/SEC	TILT AZIM 108.32 DEG	INCID ANG 71.31 DEG	LONGITUDE -41.91 DEG
HR, MI, SEC		LAT 1.86 DEG	SWING ANG 276.18 DEG	EMISS ANG 0.86 DEG	
		LONG -41.94 DEG	N.DEV. 347.87 DEG	PHASE ANG 72.14 DEG	
				ALPHA -0.83 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 2.36 DEG	AB 39.4 KM	A LAT 2.10 DEG	AB 17.2 KM
A LONG -41.23 DEG	BC 33.1 KM	A LONG -41.78 DEG	BC 4.3 KM
B LAT 1.09 DEG	CD 39.0 KM	B LAT 1.54 DEG	CD 17.2 KM
B LONG -41.50 DEG	DA 33.2 KM	B LONG -41.90 DEG	DA 4.3 KM
C LAT 1.33 DEG	TILT DISTANCE 1.2	C LAT 1.58 DEG	TILT DISTANCE 8.9
C LONG -42.57 DEG		C LONG -42.04 DEG	
D LAT 2.58 DEG		D LAT 2.13 DEG	
D LONG -42.30 DEG		D LONG -41.92 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 2.33 DEG	AB 39.5 KM	A LAT 2.08 DEG	AB 17.3 KM
A LONG -41.10 DEG	BC 33.2 KM	A LONG -41.66 DEG	BC 4.3 KM
B LAT 1.06 DEG	CD 39.1 KM	B LAT 1.52 DEG	CD 17.2 KM
B LONG -41.38 DEG	DA 33.2 KM	B LONG -41.78 DEG	DA 4.3 KM
C LAT 1.30 DEG	TILT DISTANCE 1.3	C LAT 1.55 DEG	TILT DISTANCE
C LONG -42.45 DEG		C LONG -41.92 DEG	10.2
D LAT 2.56 DEG		D LAT 2.11 DEG	
D LONG -42.18 DEG		D LONG -41.80 DEG	

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2200	66112S	ALT 47.98 KM	TILT ANG 0.97 DEG	SUN AZIM 91.07 DEG	LATITUDE 1.81 DEG
YR, MO, DY	072115.28	ALT RT 0.0153 KM/SEC	TILT AZIM 107.45 DEG	INCID ANG 71.18 DEG	LONGITUDE -41.79 DEG
HR, MI, SEC		LA 1 1.82 DEG	SWING ANG 275.32 DEG	EMISS ANG 0.99 DEG	
		LONG -41.81 DEG	N.DEV. 347.86 DEG	PHASE ANG 72.14 DEG	
				ALPHA -0.95 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 2.03 DEG	AB 39.5 KM	A LAT 2.08 DEG	AB 17.3 KM
A LONG -41.10 DEG	BC 33.2 KM	A LONG -41.66 DEG	BC 4.3 KM
B LAT 1.06 DEG	CD 39.1 KM	B LAT 1.52 DEG	CD 17.2 KM
B LONG -41.38 DEG	DA 33.2 KM	B LONG -41.78 DEG	DA 4.3 KM
C LAT 1.30 DEG	TILT DISTANCE 1.3	C LAT 1.55 DEG	TILT DISTANCE
C LONG -42.45 DEG		C LONG -41.92 DEG	10.2
D LAT 2.56 DEG		D LAT 2.11 DEG	
D LONG -42.18 DEG		D LONG -41.80 DEG	

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MISSION

FRAME NO.

22C1

YR, MO, DY

661125

HR, MI, SEC

072121.34

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	48.02 KM	TIILT ANG	1.09 DEG	SUN AZIM	91.07 DEG	LATITUDE	1.79 DEG
ALT RT	0.0164 KM/SEC	TIILT AZIM	106.79 DEG	INCID ANG	71.35 DEG	LONGITUDE	-41.66 DEG
LAT	1.79 DEG	SWING ANG	274.65 DEG	EMISS ANG	1.12 DEG		
LONG	-41.69 DEG	N.DEV.	347.86 DEG	PHASE ANG	72.14 DEG		
				ALPHA	-1.08 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.31 DEG	AB 39.5 KM
A LONG -4C.57 DEG	BC 33.2 KM
B LAT 1.03 DEG	CD 39.2 KM
B LONG -41.25 DEG	DA 33.2 KM
C LAT 1.27 DEG	TILT DISTANCE 1.5
C LONG -42.32 DEG	
D LAT 2.53 DEG	
D LONG -42.05 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.05 QEG	AB 17.3 KM
A LONG -41.53 DEG	BC 4.3 KM
B LAT 1.49 DEG	CD 17.2 KM
B LONG -41.65 DEG	DA 4.3 KM
C LAT 1.52 DEG	TILT DISTANCE 11.6
C LONG -41.79 DEG	
D LAT 2.08 DEG	
D LONG -41.67 DEG	

MISSION

FRAME NO.

22C2

YR, MO, DY

661125

HR, MI, SEC

072123.39

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	48.05 KM	TIILT ANG	1.22 DEG	SUN AZIM	91.06 DEG	LATITUDE	1.76 DEG
ALT RT	0.0175 KM/SEC	TIILT AZIM	106.26 DEG	INCID ANG	70.93 DEG	LONGITUDE	-41.53 DEG
LAT	1.77 DEG	SWING ANG	274.12 DEG	EMISS ANG	1.25 DEG		
LONG	-41.57 DEG	N.DEV.	347.86 DEG	PHASE ANG	72.14 DEG		
				ALPHA	-1.21 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.28 DEG	AB 39.5 KM
A LONG -40.24 DEG	BC 33.2 KM
B LAT 1.01 DEG	CD 39.0 KM
B LONG -41.12 DEG	DA 33.2 KM
C LAT 1.25 DEG	TILT DISTANCE 1.7
C LONG -42.19 DEG	
D LAT 2.30 DEG	
D LONG -41.92 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.02 DEG	AB 17.3 KM
A LONG -41.43 DEG	BC 4.3 KM
B LAT 1.47 DEG	CD 17.3 KM
B LONG -41.52 DEG	DA 4.3 KM
C LAT 1.50 DEG	TILT DISTANCE 12.9
C LONG -41.66 DEG	
D LAT 2.05 DEG	
D LONG -41.54 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT 2.05 QEG	AB 17.3 KM
A LONG -41.53 DEG	BC 4.3 KM
B LAT 1.49 DEG	CD 17.2 KM
B LONG -41.65 DEG	DA 4.3 KM
C LAT 1.52 DEG	TILT DISTANCE 11.6
C LONG -41.79 DEG	
D LAT 2.08 DEG	
D LONG -41.67 DEG	

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MISSION/
FRAME NO.2205
YR. MO. DY
HR. MI. SEC

TIME 661125 S/C POSITION ALT RT 48.85 KM TILT ANG 1.08 DEG
 ALT RT 0.0285 KM/SEC TILT AZIM 95.53 DEG INCID ANG 69.75 DEG
 LAT 1.48 DEG SWING ANG 263.36 DEG EMISS ANG 1.11 DEG
 LONG -42.15 DEG N.DEV. 347.83 DEG PHASE ANG 70.86 DEG
 ALPHA "1.11 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.01 DEG AB 4.0.2 KM
 A LONG -41.42 DEG BC 33.7 KM
 B LAT 0.71 DEG CD 39.6 KM
 B LONG -41.70 DEG DA 33.8 KM
 C LAT C.55 DEG TILT DISTANCE 1.5
 C LONG -42.79 DEG D LAT 2.23 DEG
 D LAT 2.52 DEG D LONG -42.52 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.74 DEG AB 17.6 KM
 A LONG -41.99 DEG BC 4.4 KM
 B LAT 1.18 DEG CD 17.5 KM
 B LONG -42.11 DEG DA 4.4 KM
 C LAT 1.21 DEG TILT DISTANCE 11.5
 C LONG -42.25 DEG D LAT 1.77 DEG
 D LAT -42.13 DEG D LONG -42.13 DEG

MISSION/
FRAME NO.2206
YR. MO. DY
HR. MI. SEC

TIME 661125 S/C POSITION ALT 48.91 KM TILT ANG 1.21 DEG INCID ANG 91.00 DEG
 ALT RT 0.0236 KM/SEC TILT AZIM 96.19 DEG EMISS ANG 69.62 DEG
 LAT 1.45 DEG SWING ANG 264.02 DEG PHASE ANG 70.86 DEG
 LONG -42.02 DEG N.DEV. 347.83 DEG ALPHA -1.24 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.98 DEG AB 4.0.3 KM
 A LONG -41.29 DEG BC 33.8 KM
 B LAT 0.68 DEG CD 39.7 KM
 B LONG -41.57 DEG DA 33.9 KM
 C LAT 0.53 DEG TILT DISTANCE 1.7
 C LONG -42.66 DEG D LAT 2.21 DEG
 D LAT 2.39 DEG B LONG -42.39 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.72 DEG AB 17.6 KM
 A LONG -41.86 DEG BC 4.4 KM
 B LAT 1.15 DEG CD 17.6 KM
 B LONG -41.98 DEG DA 4.4 KM
 C LAT 1.18 DEG TILT DISTANCE 12.9
 C LONG -42.12 DEG D LAT 1.75 DEG
 D LONG -42.00 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.01 DEG LATITUDE 1.48 DEG
 INCID ANG 69.75 DEG LONGITUDE -42.12 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.00 DEG LATITUDE 1.45 DEG
 INCID ANG 69.62 DEG LONGITUDE -41.99 DEG

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MISSION / FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT				
2207	YR, MO, DY HR, MI, SEC	661125 105021.91	ALT RT LAT LONG	48.97 KM 0.0307 KM/SEC 1.43 DEG -41.90 DEG.	TILT ANG TILT AZIM SWING ANG N.DEV.	1.34 DEG 96.72 DEG 264.55 DEG 347.83 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG	90.99 DEG 69.49 DEG 1.38 DEG 70.86 DEG	LATITUDE LONGITUDE ELEVATION	1.42 DEG -41.86 DEG -1.37 DEG
MEDIUM RESOLUTION										
MISSION / FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION					
2207	YR, MO, DY HR, MI, SEC	661125 105021.91	A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	1.96 DEG -41.16 DEG 0.65 DEG -41.44 DEG -0.50 DEG -42.53 DEG 2.18 DEG -42.26 DEG	AB BC CD DA DA CB DC AB	40.4 KM 33.7 KM 39.7 KM 33.9 KM 1.9 1.9 1.9 1.9	CORNER COORDINATE	SIDE LENGTH		
2208	YR, MO, DY HR, MI, SEC	661125 105024.01	ALT RT LAT LONG	49.04 KM 0.0318 KM/SEC 1.40 DEG -41.77 DEG	TILT ANG TILT AZIM SWING ANG N.DEV.	1.47 DEG 97.16 DEG 264.99 DEG 347.82 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG	90.99 DEG 69.36 DEG 1.51 DEG 70.86 DEG	LATITUDE LONGITUDE ELEVATION	1.39 DEG -41.73 DEG -1.50 DEG
MEDIUM RESOLUTION										
MISSION / FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION					
2208	YR, MO, DY HR, MI, SEC	661125 105024.01	A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	1.93 DEG -41.03 DEG 0.63 DEG -41.31 DEG 0.87 DEG -42.40 DEG 2.16 DEG -42.13 DEG	AB BC CD DA CB DC DC AB	40.5 KM 33.9 KM 39.7 KM 34.0 KM 2.1 2.1 2.1 2.1	CORNER COORDINATE	SIDE LENGTH		

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MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2209	661125 YR, MO, DY HR, MI, SEC	ALT RT LAT 105°26.11 LONG 0.0329 KM/SEC 1.37 DEG -41.65 DEG	49.10 KM TILT ANG 1.60 DEG TILT AZIM 97.53 DEG SWING ANG 265.35 DEG N.DEV. 347.82 DEG	SUN AZIM 90.98 DEG INCID ANG 69.23 DEG EMISS ANG 1.64 DEG PHASE ANG 70.86 DEG ALPHA -1.63 DEG	LATITUDE 1.37 DEG LONGITUDE -41.60 DEG

MEDIUM RESOLUTION

MISSION/	FRAME NO.	TIME	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
2209	661125 YR, MO, DY HR, MI, SEC	ALT RT LAT 105°26.11 LONG 0.0329 KM/SEC 1.37 DEG -41.65 DEG	A LAT 1.90 DEG A LONG -40.89 DEG B LAT 0.60 DEG B LONG -41.18 DEG C LAT 0.85 DEG C LONG -42.27 DEG D LAT 2.13 DEG D LONG -42.00 DEG	AB 40.5 KM BC 33.9 KM CD 39.7 KM DA 34.0 KM TILT DISTANCE 2.3	CORNER COORDINATE SIDE LENGTH A LAT 1.64 DEG AB 17.7 KM A LONG -41.47 DEG BC 4.4 KM B LAT 1.07 DEG CD 17.6 KM B LONG -41.59 DEG DA 4.4 KM C LAT 1.10 DEG TILT DISTANCE 17.0 C LONG -41.73 DEG D LAT 1.67 DEG D LONG -41.61 DEG

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
2210	661125 YR, MO, DY HR, MI, SEC	ALT RT LAT 105°26.21 LONG 0.0340 KM/SEC 1.35 DEG -41.52 DEG	49.17 KM TILT ANG 1.73 DEG TILT AZIM 97.85 DEG SWING ANG 265.67 DEG N.DEV. 347.82 DEG	SUN AZIM 90.97 DEG INCID ANG 69.10 DEG EMISS ANG 1.78 DEG PHASE ANG 70.86 DEG ALPHA -1.76 DEG	LATITUDE 1.34 DEG LONGITUDE -41.47 DEG

MEDIUM RESOLUTION

MISSION/	FRAME NO.	TIME	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
2210	661125 YR, MO, DY HR, MI, SEC	ALT RT LAT 105°26.21 LONG 0.0340 KM/SEC 1.35 DEG -41.52 DEG	A LAT 1.88 DEG A LONG -40.76 DEG B LAT 0.57 DEG B LONG -41.05 DEG C LAT 0.82 DEG C LONG -42.14 DEG D LAT 2.10 DEG D LONG -41.87 DEG	AB 40.6 KM BC 34.3 KM CD 39.8 KM DA 34.1 KM TILT DISTANCE 2.4	CORNER COORDINATE SIDE LENGTH A LAT 1.61 DEG AB 17.7 KM A LONG -41.34 DEG BC 4.4 KM B LAT 1.04 DEG CD 17.7 KM B LONG -41.46 DEG DA 4.5 KM C LAT 1.07 DEG TILT DISTANCE 18.3 C LONG -41.60 DEG D LAT 1.64 DEG D LONG -41.48 DEG

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MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT				
221.1 YR. MO. DY HR. MI. SEC	661125 165°30'.34	ALT RT LAT LONG	40.25 KM 0.2350 KM/SEC 1°32° DEG -41.39 DEG	TILT ANG SWING ANG N.DEV. 347.82 DEG	1°36° DEG 58°96° DEG EMISS ANG PHASE ANG ALPHA	SUN AZIM INCID ANG EMISS ANG PHASE ANG 70.86 DEG -1.89 DEG	90.97 DEG 1°31° DEG 1°91° DEG 70.86 DEG -1.89 DEG	LATITUDE LONGITUDE EMISS ANG PHASE ANG ALPHA	1°31° DEG -41.34 DEG 70.86 DEG -1.89 DEG
MEDIUM RESOLUTION									
CORNER COORDINATE SIDE LENGTH									
A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	1°45° DEG -40.63° DEG 0°54° DEG -40.92° DEG 0°79° DEG -42.01° DEG 2°06° DEG -41.74° DEG	AB BC CD DA TA TI C D	40.7 KM 39.3 KM 39.8 KM 34.2 KM 2.5 2.5 2.5 2.5						
HIGH RESOLUTION									
CORNER COORDINATE SIDE LENGTH									
A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	1°56° DEG -41.21° DEG 1°01° DEG -41.33° DEG 1°54° DEG -41.47° DEG 1°61° DEG -41.35° DEG	AB BC CD DA C LAT C LONG D LAT D LONG	7.7 KM 4.5 KM 37.7 KM 4.5 KM TILT DISTANCE 19.7						
MEDIUM RESOLUTION									
MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT				
221.2 YR. MO. DY HR. MI. SEC	661125 105032.41	ALT RT LAT LONG	49.32 KM 0.9361 KM/SEC 1°29° DEG -41.27 DEG	TILT ANG SWING ANG N.DEV. 347.82 DEG	1°99° DEG 93.36 DEG 266.17 DEG 347.82 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	90.96 DEG 68.83 DEG 2.04 DEG 70.86 DEG -2.03 DEG	LATITUDE LONGITUDE EMISS ANG PHASE ANG ALPHA	1°29° DEG -41.21° DEG 2.04 DEG 70.86 DEG -2.03 DEG
HIGH RESOLUTION									
CORNER COORDINATE SIDE LENGTH									
A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	1°83° DEG -40.50° DEG 0°51° DEG -40.75° DEG 0°75° DEG -41.88° DEG 2°05° DEG -41.61° DEG	AB BC CD DA TA TI C D	40.8 KM 34.1 KM 39.8 KM 34.2 KM 2.8 2.8 2.8 2.8						
MEDIUM RESOLUTION									
MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT				
221.3 YR. MO. DY HR. MI. SEC	661125 105032.41	ALT RT LAT LONG	49.32 KM 0.9361 KM/SEC 1°29° DEG -41.27 DEG	TILT ANG SWING ANG N.DEV. 347.82 DEG	1°99° DEG 93.36 DEG 266.17 DEG 347.82 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	90.96 DEG 68.83 DEG 2.04 DEG 70.86 DEG -2.03 DEG	LATITUDE LONGITUDE EMISS ANG PHASE ANG ALPHA	1°29° DEG -41.21° DEG 2.04 DEG 70.86 DEG -2.03 DEG
HIGH RESOLUTION									
CORNER COORDINATE SIDE LENGTH									
A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	1°56° DEG -41.08° DEG 0.98° DEG -41.20° DEG 1°02° DEG -41.34° DEG 1°59° DEG -41.22° DEG	AB BC CD DA C LAT C LONG D LAT D LONG	17.8 KM 4.5 KM 17.7 KM 4.5 KM TILT DISTANCE 21.1						

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MISSION/
FRAME NO.

2213 TIME 66112S S/C POSITION ALT 59.86 KM TILT ANG 68.49 DEG PRINCIPAL POINT SUN AZIM 92.03 DEG LATITUDE 7° 36' DEG
 YR-MO-DY HR, MIN, SEC 1414 9.11 ALT RT -0.0551 KM/SEC TILT AZIM 11.74 DEG LONGITUDE -52.77 DEG
 SWING ANG 179.19 DEG
 LAT 3.30 DEG EWSI'S ANG 73.26 DEG
 LONG -53.75 DEG PHASE ANG 95.97 DEG
 N.DEV. 323.16 DEG ALPHA -38.21 DEG

MISSION/
FRAME NO.

2213 TIME 66112S S/C POSITION ALT 49.59 KM TILT ANG 0.56 DEG PRINCIPAL POINT SUN AZIM 91.07 DEG LATITUDE 2° 46' DEG
 YR-MO-DY HR, MIN, SEC 174514.91 ALT RT -0.0380 KM/SEC TILT AZIM 140.63 DEG LONGITUDE -53.51 DEG
 SWING ANG 308.66 DEG
 LAT -2.87 DEG EWSI'S ANG 0.58 DEG
 LONG -53.62 DEG PHASE ANG 78.13 DEG
 N.DEV. 348.03 DEG ALPHA -0.38 DEG

MISSION/
FRAME NO.

2214 TIME 66112S S/C POSITION ALT 49.59 KM TILT ANG 0.56 DEG PRINCIPAL POINT SUN AZIM 91.07 DEG LATITUDE 2° 46' DEG
 YR-MO-DY HR, MIN, SEC 174514.91 ALT RT -0.0380 KM/SEC TILT AZIM 140.63 DEG LONGITUDE -53.51 DEG
 SWING ANG 308.66 DEG
 LAT -2.87 DEG EWSI'S ANG 0.58 DEG
 LONG -53.62 DEG PHASE ANG 78.13 DEG
 N.DEV. 348.03 DEG ALPHA -0.38 DEG

MISSION/
FRAME NO.

2214 TIME 66112S S/C POSITION ALT 49.59 KM TILT ANG 0.56 DEG PRINCIPAL POINT SUN AZIM 91.07 DEG LATITUDE 2° 46' DEG
 YR-MO-DY HR, MIN, SEC 174514.91 ALT RT -0.0380 KM/SEC TILT AZIM 140.63 DEG LONGITUDE -53.51 DEG
 SWING ANG 308.66 DEG
 LAT -2.87 DEG EWSI'S ANG 0.58 DEG
 LONG -53.62 DEG PHASE ANG 78.13 DEG
 N.DEV. 348.03 DEG ALPHA -0.38 DEG

MISSION/
FRAME NO.

2214 TIME 66112S S/C POSITION ALT 49.59 KM TILT ANG 0.56 DEG PRINCIPAL POINT SUN AZIM 91.07 DEG LATITUDE 2° 46' DEG
 YR-MO-DY HR, MIN, SEC 174514.91 ALT RT -0.0380 KM/SEC TILT AZIM 140.63 DEG LONGITUDE -53.51 DEG
 SWING ANG 308.66 DEG
 LAT -2.87 DEG EWSI'S ANG 0.58 DEG
 LONG -53.62 DEG PHASE ANG 78.13 DEG
 N.DEV. 348.03 DEG ALPHA -0.38 DEG

MISSION/
FRAME NO.

2214 TIME 66112S S/C POSITION ALT 49.59 KM TILT ANG 0.56 DEG PRINCIPAL POINT SUN AZIM 91.07 DEG LATITUDE 2° 46' DEG
 YR-MO-DY HR, MIN, SEC 174514.91 ALT RT -0.0380 KM/SEC TILT AZIM 140.63 DEG LONGITUDE -53.51 DEG
 SWING ANG 308.66 DEG
 LAT -2.87 DEG EWSI'S ANG 0.58 DEG
 LONG -53.62 DEG PHASE ANG 78.13 DEG
 N.DEV. 348.03 DEG ALPHA -0.38 DEG

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MISSION/

FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 52.68 KM ALT RT -0.0656 KM/SEC LAT 3.49 DEG LONG -58.73 DEG	TILT ANG 52.76 DEG TILT AZIM 11.99 DEG SWING ANG 179.39 DEG N.DEV. 331.05 DEG	SUN AZIM 91.64 DEG INCID ANG 80.17 DEG EMISS ANG 66.35 DEG PHASE ANG 95.57 DEG ALPHA -27.13 QEG	LATITUDE 7.03 DEG LONGITUDE -57.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 11.96 DEG A LONG -55.42 DEG B LAT 4.80 DEG B LONG -57.70 DEG C LAT 5.14 DEG C LONG -59.15 DEG D LAT 14.94 DEG D LONG -60.17 DEG	AB 230.1 KM BC 45.0 KM CD 74.5 KM DA 218.2 KM TILT DISTANCE 55.8	CORNER COORDINATE SIDE LENGTH A LAT 13.35 DEG AB 14.6 KM A LONG -56.89 DEG BC 7.9 KM B LAT 5.74 DEG CD 145.1 KM B LONG -58.13 DEG DA 20.1 KM C LAT 5.80 DEG TILT DISTANCE 83.8 C LONG -58.38 DEG D LAT 19.55 DEG D LONG -57.53 DEG

MISSION/

FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 59.90 KM ALT RT -0.0697 KM/SEC LAT 3.09 DEG LONG 34.27 DEG	TILT ANG 1.67 DEG TILT AZIM 283.46 DEG SWING ANG 82.78 DEG N.DEV. 339.32 DEG	SUN AZIM 92.28 DEG INCID ANG 76.73 DEG EMISS ANG 1.73 DEG PHASE ANG 75.03 DEG ALPHA 1.69 DEG	LATITUDE 3.10 DEG LONGITUDE 34.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 3.61 DEG A LONG 35.14 DEG B LAT 2.11 DEG B LONG 34.57 DEG C LAT 2.58 DEG C LONG 33.28 DEG D LAT 4.11 DEG D LONG 33.86 DEG	AB 48.5 KM BC 41.6 KM CD 49.6 KM DA 41.5 KM TILT DISTANCE 2.4	CORNER COORDINATE SIDE LENGTH A LAT 3.40 DEG AB 21.5 KM A LONG 34.42 DEG BC 5.4 KM B LAT 2.74 DEG CD 21.6 KM B LONG 34.17 DEG DA 5.4 KM C LAT 2.80 DEG TILT DISTANCE 17.7 C LONG 34.00 DEG D LAT 3.47 DEG D LONG 34.26 DEG

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MISSION/

FRAME NO.
390c
YR, MO, DY
HR, MI, SECTIME
670215
100443.11

S/C POSITION
ALT 59.72 KM
ALT RT -0.0684 KM/SEC
LAT 3.03 DEG
LONG 34.42. DEG

N.O.E.V.S/C ORIENTATION
TILT ANG 1.51 DEG
TILT AZIM 282.71 DEG
SWING ANG 82.01 DEG
EMISS ANG 1.56 DEG
PHASE ANG 75.03 DEG
ALPHA 1.54 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.55 DEG AB 4.8.4 KM
A LONG 25.29 DEG BC 41.4 KM
B LAT 2.35 DEG CD 49.4 KM
B LONG 34.72 DEG DA 41.4 KM
C LAT 2.52 DEG TILT DISTANCE 2.2
C LONG 33.44 DEG 2.2
D LAT 4.05 DEG
D LONG 34.01 DEG

PHOTO ILLUMINATION

SUN AZIM 92.27 DEG
INCID ANG 76.57 DEG
EMISS ANG 1.56 DEG
PHASE ANG 75.03 DEG
ALPHA 1.54 DEG

MISSION/

FRAME NO.
3007
YR, MO, DY
HR, MI, SECTIME
670215
100045.61

S/C POSITION
ALT 59.55 KM
ALT RT -0.0671 KM/SEC
LAT 2.98 DEG
LONG 34.56 DEG

N.O.E.V.S/C ORIENTATION
TILT ANG 1.36 DEG
TILT AZIM 281.82 DEG
SWING ANG 81.12 DEG
EMISS ANG 1.41 DEG
PHASE ANG 75.03 DEG
ALPHA 1.39 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.49 DEG AB 4.8.3 KM
A LONG 35.33 DEG BC 41.3 KM
B LAT 2.90 DEG CD 49.2 KM
B LONG 34.87 DEG DA 41.2 KM
C LAT 2.47 DEG TILT DISTANCE 2.0
C LONG 33.59 DEG 2.0
D LAT 3.59 DEG
D LONG 34.16 DEG

PHOTO ILLUMINATION

SUN AZIM 92.27 DEG
INCID ANG 76.42 DEG
EMISS ANG 1.41 DEG
PHASE ANG 75.03 DEG
ALPHA 1.39 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.29 DEG AB 21.4 KM
A LONG 34.72 DEG BC 5.4 KM
B LAT 2.62 DEG CD 21.4 KM
B LONG 34.47 DEG DA 5.4 KM
C LAT 2.69 DEG TILT DISTANCE 14.4
C LONG 34.31 DEG
D LAT 3.35 DEG
D LONG 34.56 DEG

PHOTO ILLUMINATION

SUN AZIM 92.27 DEG
INCID ANG 76.42 DEG
EMISS ANG 1.41 DEG
PHASE ANG 75.03 DEG
ALPHA 1.39 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.29 DEG AB 21.4 KM
A LONG 34.72 DEG BC 5.4 KM
B LAT 2.62 DEG CD 21.4 KM
B LONG 34.47 DEG DA 5.4 KM
C LAT 2.69 DEG TILT DISTANCE 14.4
C LONG 34.31 DEG
D LAT 3.35 DEG
D LONG 34.56 DEG

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MISSION/
FRAME NO.3008
YR, MO, DY
HR, MI, SEC
670215
120046.11

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 59.39 KM	TILT ANG 1.21 DEG	SUN AZIM 92.26 DEG	LATITUDE 2.93 DEG
ALT RT -0.0655 KM/SEC	TILT AZIM 280.70 DEG	INCID ANG 76.27 DEG	LONGITUDE 34.65 DEG
LAT 2.92 DEG	SWING ANG 79.99 DEG	EMISS ANG 1.25 DEG	
LONG 34.70 DEG	N.DEV. 339.29 DEG	PHASE ANG 75.53 DEG	
		ALPHA 1.24 DEG	

MISSION/
FRAME NO.3009
YR, MO, DY
HR, MI, SEC
670215
100050.51

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 3.44 DEG	AB 48.2 KM	A LAT 3.23 DEG	A LAT 3.17 DEG	AR 21.3 KM	
A LONG 36.58 DEG	BC 41.2 KM	A LONG 34.87 DEG	A LONG 35.01 DEG	BC 5.4 KM	
B LAT 1.55 DEG	CD 49.0 KM	B LAT 2.57 DEG	B LAT 2.52 DEG	CD 21.4 KM	
B LONG 35.02 DEG	DA 41.1 KM	B LONG 34.62 DEG	B LONG 34.76 DEG	DA 5.4 KM	
C LAT 2.42 DEG	TILT DISTANCE 1.7	C LAT 2.63 DEG	C LAT 2.66 DEG	TILT DISTANCE 12.8	
C LONG 33.74 DEG		C LONG 34.45 DEG	C LONG 34.48 DEG		
D LAT 3.93 DEG		D LAT 3.29 DEG	D LAT 3.24 DEG		
D LONG 34.31 DEG		D LONG 34.70 DEG	D LONG 34.65 DEG		

MISSION/
FRAME NO.3009
YR, MO, DY
HR, MI, SEC
670215
100050.51

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 59.23 KM	TILT ANG 1.07 DEG	SUN AZIM 92.26 DEG	LATITUDE 2.88 DEG
ALT RT -0.0647 KM/SEC	TILT AZIM 279.34 DEG	INCID ANG 76.13 DEG	LONGITUDE 34.83 DEG
LAT 2.87 DEG	SWING ANG 78.62 DEG	EMISS ANG 1.10 DEG	
LONG 34.84 DEG	N.DEV. 339.29 DEG	PHASE ANG 75.03 DEG	
		ALPHA 1.10 DEG	

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 3.38 DEG	AB 48.1 KM	A LAT 3.17 DEG	A LAT 3.17 DEG	AR 21.3 KM	
A LONG 35.72 DEG	BC 41.1 KM	A LONG 35.01 DEG	A LONG 35.01 DEG	BC 5.4 KM	
B LAT 1.89 DEG	CD 48.8 KM	B LAT 2.52 DEG	B LAT 2.52 DEG	CD 21.3 KM	
B LONG 35.16 DEG	DA 41.0 KM	B LONG 34.76 DEG	B LONG 34.76 DEG	DA 5.4 KM	
C LAT 2.36 DEG	TILT DISTANCE 1.5	C LAT 2.58 DEG	C LAT 2.58 DEG	TILT DISTANCE 11.3	
C LONG 32.88 DEG		C LONG 34.60 DEG	C LONG 34.60 DEG		
D LAT 3.87 DEG		D LAT 3.24 DEG	D LAT 3.24 DEG		
D LONG 34.46 DEG		D LONG 34.85 DEG	D LONG 34.85 DEG		

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MISSION/
FRAME NO.

3010
YR-MO-DY 670215
HR-MI-SEC 100C53.01

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	59.07 KM	TILT ANG 0.92 DEG	SUN AZIM 92.25 DEG	LATITUDE 2.82 DEG	
ALT RT	-0.3534 KM/SEC	TILT AZIM 277.45 DEG	INCID ANG 75.98 DEG	LONGITUDE 34.95 DEG	
LAT	2.82 DEG	SWING ANG 76.73 DEG	FMISS ANG 3.95 DEG		
LONG	34.98 DEG	N.DEV. 339.28 DEG	PHASE ANG 75.03 DEG		
			ALPHA 3.95 DEG		

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT	3.32 DEG	AB 4.8° 1 KM	CORNER COORDINATE
A LONG	35.87 DEG	BC 41.3 KM	A LAT 3.12 DEG
B LAT	1.84 DEG	CD 43.5 KM	A LONG 35.16 DEG
B LONG	25.31 DEG	DA 43.9 KM	B LAT 2.46 DEG
C LAT	2.31 DEG	TILT DISTANCE 1.3	B LONG 34.91 DEG
C LONG	34.63 DEG		C LAT 2.52 DEG
D LAT	3.61 DEG		C LONG 34.74 DEG
D LONG	34.60 DEG		D LAT 3.18 DEG

MISSION/
FRAME NO.

3011
YR-MO-DY 670215
HR-MI-SEC 100C55.51

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	58.91 KM	TILT ANG 0.77 DEG	SUN AZIM 92.25 DEG	LATITUDE 2.77 DEG	
ALT RT	-0.2621 KM/SEC	TILT AZIM 274.86 DEG	INCID ANG 75.83 DEG	LONGITUDE 35.13 DEG	
LAT	2.75 DEG	SWING ANG 74.12 DEG	FMISS ANG 0.80 DEG		
LONG	35.12 DEG	N.DEV. 339.27 DEG	PHASE ANG 75.03 DEG		
			ALPHA 0.80 DEG		

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT	3.27 DEG	AB 4.8° 0 KM	CORNER COORDINATE
A LONG	36.01 DEG	BC 40.9 KM	A LAT 3.06 DEG
B LAT	1.79 DEG	CD 48.5 KM	A LONG 35.30 DEG
B LONG	35.45 DEG	DA 43.8 KM	B LAT 2.41 DEG
C LAT	2.26 DEG	TILT DISTANCE 1.1	B LONG 35.05 DEG
C LONG	34.19 DEG		C LAT 2.47 DEG
D LAT	2.75 DEG		C LONG 34.89 DEG
D LONG	34.75 DEG		D LAT 3.12 DEG

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT	3.12 DEG	AB 21.2 KM	CORNER COORDINATE
A LONG	35.16 DEG	BC 5.3 KM	A LAT 3.12 DEG
B LAT	2.46 DEG	CD 21.3 KM	A LONG 35.16 DEG
B LONG	34.91 DEG	DA 5.3 KM	B LAT 2.46 DEG
C LAT	2.52 DEG	TILT DISTANCE 9.7	B LONG 34.91 DEG
C LONG	34.74 DEG		C LAT 2.52 DEG
D LAT	3.18 DEG		D LONG 34.99 DEG
D LONG	34.99 DEG		

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MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3012	670215 YR.MD.DY	ALT 58.76 KM ALT RT -0.0609 KM/SEC	TIILT ANG 0.63 DEG TILT AZIM 271.03 DEG SWING ANG 70.29 DEG N.DEV. 339.26 DEG	SUN AZIM 92.24 DEG INCID ANG 75.68 DEG EMISS ANG 0.65 DEG PHASE ANG 75.03 DEG ALPHA 0.65 DEG.	LATITUDE 2.71 DEG LONGITUDE 35.25 DEG
	HR.MI.SEC	LAT. 2.71 DEG LONG 35.27 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION
A LAT 3.21 DEG	AB 47.9 KM	A LAT 3.00 DEG	CORNER COORDINATE SIDE LENGTH
A LONG 36.16 DEG	BC 40.7 KM	A LONG 35.45 DEG	AB 21.1 KM
B LAT 1.73 DEG	CD 48.3 KM	B LAT 2.35 DEG	BC 5.3 KM
B LONG 35.60 DEG	DA 40.7 KM	B LONG 35.20 DEG	CD 21.1 KM
C LAT 2.20 DEG	TILT DISTANCE 0.9	C LAT 2.41 DEG	DA 5.3 KM
C LONG 34.34 DEG		C LONG 35.04 DEG	TILT DISTANCE 6.6
D LAT 3.69 DEG		D LAT 3.07 DEG	
D LONG 34.90 DEG		D LONG 35.29 DEG	

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3013	670215 YR.MD.DY	ALT 58.62 KM ALT RT -0.0596 KM/SEC	TIILT ANG 0.49 DEG TILT AZIM 265.25 DEG SWING ANG 64.50 DEG N.DEV. 339.25 DEG	SUN AZIM 92.24 DEG INCID ANG 75.54 DEG EMISS ANG 0.51 DEG PHASE ANG 75.03 DEG ALPHA 0.50 DEG	LATITUDE 2.66 DEG LONGITUDE 35.39 DEG
	HR.MI.SEC	LAT. 2.66 DEG LONG 35.40 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION
A LAT 3.06 DEG	AB 47.8 KM	A LAT 2.95 DEG	CORNER COORDINATE SIDE LENGTH
A LONG 36.30 DEG	BC 40.6 KM	A LONG 35.59 DEG	AB 21.1 KM
B LAT 1.68 DEG	CD 48.1 KM	B LAT 2.30 DEG	BC 5.3 KM
B LONG 35.74 DEG	DA 40.5 KM	B LONG 35.35 DEG	CD 21.1 KM
C LAT 2.15 DEG	TILT DISTANCE 0.7	C LAT 2.36 DEG	DA 5.3 KM
C LONG 34.48 DEG		C LONG 35.18 DEG	TILT DISTANCE 5.2
D LAT 3.64 DEG		D LAT 3.01 DEG	
D LONG 35.05 DEG		D LONG 35.43 DEG	

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MISSION/

FRAME NO.

3014 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 58.47 KM TILT ANG 0.36 DEG SUN AZIM 92.23 DEG LATITUDE 2.60 DEG
 HR, MI, SEC ALT RT -0.0584 KM/SEC TILT AZIM 254.71 DEG INCID ANG 75.39 DEG LONGITUDE 35.53 DEG
 LAT 2.60 DEG SWING ANG 53.96 DEG EMISS ANG 0.37 DEG
 LONG 35.55 DEG N.DEV. 339.25 DEG PHASE ANG 75.03 DEG
 ALPHA 0.35 DEG

MISSION RESOLUTION

MISSION	FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3015	670215	1001 5.31	ALT 56.33 KM ALT RT -0.0572 KM/SEC LAT 2.55 DEG LONG 35.68 DEG	TILT ANG 0.26 DEG TILT AZIM 235.04 DEG SWING ANG 34.28 DEG N.DEV. 339.24 DEG	SUN AZIM 92.23 DEG INCID ANG 75.24 DEG EMISS ANG 0.26 DEG PHASE ANG 75.03 DEG ALPHA 0.21 DEG	LATITUDE 2.55 DEG LONGITUDE 35.68 DEG

MISSION RESOLUTION

MISSION	FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3015	670215	1001 5.31	ALT 56.33 KM ALT RT -0.0572 KM/SEC LAT 2.55 DEG LONG 35.68 DEG	TILT ANG 0.26 DEG TILT AZIM 235.04 DEG SWING ANG 34.28 DEG N.DEV. 339.24 DEG	SUN AZIM 92.23 DEG INCID ANG 75.24 DEG EMISS ANG 0.26 DEG PHASE ANG 75.03 DEG ALPHA 0.21 DEG	LATITUDE 2.55 DEG LONGITUDE 35.68 DEG

MISSION/

FRAME NO.

3015 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 56.33 KM TILT ANG 0.26 DEG SUN AZIM 92.23 DEG LATITUDE 2.55 DEG
 HR, MI, SEC ALT RT -0.0572 KM/SEC TILT AZIM 235.04 DEG INCID ANG 75.24 DEG LONGITUDE 35.68 DEG
 LAT 2.55 DEG SWING ANG 34.28 DEG EMISS ANG 0.26 DEG
 LONG 35.68 DEG N.DEV. 339.24 DEG PHASE ANG 75.03 DEG
 ALPHA 0.21 DEG

MISSION RESOLUTION

MISSION	FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3015	670215	1001 5.31	ALT 56.33 KM ALT RT -0.0572 KM/SEC LAT 2.55 DEG LONG 35.68 DEG	TILT ANG 0.26 DEG TILT AZIM 235.04 DEG SWING ANG 34.28 DEG N.DEV. 339.24 DEG	SUN AZIM 92.23 DEG INCID ANG 75.24 DEG EMISS ANG 0.26 DEG PHASE ANG 75.03 DEG ALPHA 0.21 DEG	LATITUDE 2.55 DEG LONGITUDE 35.68 DEG

MISSION RESOLUTION

MISSION	FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3015	670215	1001 5.31	ALT 56.33 KM ALT RT -0.0572 KM/SEC LAT 2.55 DEG LONG 35.68 DEG	TILT ANG 0.26 DEG TILT AZIM 235.04 DEG SWING ANG 34.28 DEG N.DEV. 339.24 DEG	SUN AZIM 92.23 DEG INCID ANG 75.24 DEG EMISS ANG 0.26 DEG PHASE ANG 75.03 DEG ALPHA 0.21 DEG	LATITUDE 2.55 DEG LONGITUDE 35.68 DEG

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MISSION/ FRAME NO.		TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
YR, MO, DY	HR, MI, SEC	ALT	ALT RT	58.19 KM -0.0559 KM/SEC	TILT ANG TILT AZIM 198.54 DEG	SUN AZIM 92.22 DEG INCID ANG 75.09 DEG	SUN AZIM 92.22 DEG EMISS ANG 0.22 DEG	LATITUDE LONGITUDE	2.49 DEG 35.82 DEG		
3016	10061 7.81	LAT	2.50 DEG	SWING ANG 357.78 DEG	N.DEV.	339.23 DEG	PHASE ANG 75.03 DEG				
		LONG	35.82 DEG	ALPHA			0.06 DEG				
MEDIUM RESOLUTION											
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
A LAT	2.99 DEG	AB	47.6 KM	A LAT	2.78 DEG	AB	20.9 KM	A LAT	2.78 DEG	AB	20.9 KM
A LONG	36.73 DEG	BC	40.3 KM	A LONG	36.03 DEG	BC	5.3 KM	B LAT	2.14 DEG	CD	20.9 KM
B LAT	1.52 DEG	CD	47.6 KM	B LONG	35.78 DEG	DA	5.3 KM	C LAT	2.20 DEG	DA	5.3 KM
B LONG	36.18 DEG	DA	40.2 KM	C LAT	2.20 DEG	TILT DISTANCE		C LONG	35.62 DEG	2.2	
C LAT	1.59 DEG	TILT DISTANCE	0.2	D LAT	2.84 DEG			D LONG	35.86 DEG		
C LONG	34.53 DEG			D LONG	35.86 DEG						
D LAT	3.46 DEG										
D LONG	35.49 DEG										
HIGH RESOLUTION											
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
A LAT	2.93 DEG	AB	47.5 KM	A LAT	2.73 DEG	AB	20.9 KM	A LAT	2.73 DEG	AB	20.9 KM
A LONG	36.87 DEG	BC	40.2 KM	A LONG	36.17 DEG	BC	5.3 KM	B LAT	2.08 DEG	CD	20.9 KM
B LAT	1.47 DEG	CD	47.5 KM	B LONG	35.92 DEG	DA	5.2 KM	C LAT	2.14 DEG	TILT DISTANCE	
B LONG	36.32 DEG	DA	40.2 KM	C LONG	35.76 DEG			D LAT	2.79 DEG		
C LAT	1.94 DEG	TILT DISTANCE	0.2	D LONG	36.01 DEG			D LONG	36.01 DEG		
C LONG	35.07 DEG										
D LAT	3.40 DEG										
D LONG	35.63 DEG										

MISSION/
FRAME NO.

3017 TIME
YR, MO, DY 670215
HR, MI, SEC 100110.21

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	ALT RT	58.06 KM -0.0547 KM/SEC	TILT ANG TILT AZIM 164.67 DEG	SUN AZIM 92.21 DEG INCID ANG 74.95 DEG	SUN AZIM 92.21 DEG EMISS ANG 0.27 DEG	LATITUDE LONGITUDE	2.44 DEG 35.96 DEG
LAT	2.45 DEG	SWING ANG 323.90 DEG N.DEV.	339.23 DEG	PHASE ANG 75.03 DEG	ALPHA	-0.08 DEG	

MEDIUM RESOLUTION		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
CORNER COORDINATE	SIDE LENGTH						
A LAT	2.93 DEG	AB	47.5 KM	A LAT	2.73 DEG	AB	20.9 KM
A LONG	36.87 DEG	BC	40.2 KM	A LONG	36.17 DEG	BC	5.3 KM
B LAT	1.47 DEG	CD	47.5 KM	B LAT	2.08 DEG	CD	20.9 KM
B LONG	36.32 DEG	DA	40.2 KM	B LONG	35.92 DEG	DA	5.2 KM
C LAT	1.94 DEG	TILT DISTANCE	0.2	C LAT	2.14 DEG	TILT DISTANCE	
C LONG	35.07 DEG			C LONG	35.76 DEG		
D LAT	3.40 DEG			D LAT	2.79 DEG		
D LONG	35.63 DEG			D LONG	36.01 DEG		

MEDIUM RESOLUTION		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
CORNER COORDINATE	SIDE LENGTH						
A LAT	2.99 DEG	AB	47.6 KM	A LAT	2.78 DEG	AB	20.9 KM
A LONG	36.73 DEG	BC	40.3 KM	A LONG	36.03 DEG	BC	5.3 KM
B LAT	1.52 DEG	CD	47.6 KM	B LAT	2.14 DEG	CD	20.9 KM
B LONG	36.18 DEG	DA	40.2 KM	B LONG	35.78 DEG	DA	5.3 KM
C LAT	1.59 DEG	TILT DISTANCE	0.2	C LAT	2.20 DEG	TILT DISTANCE	
C LONG	34.53 DEG			C LONG	35.62 DEG		
D LAT	3.46 DEG			D LAT	2.84 DEG		
D LONG	35.49 DEG			D LONG	35.86 DEG		

HIGH RESOLUTION		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
CORNER COORDINATE	SIDE LENGTH						
A LAT	2.78 DEG	AB	20.9 KM	A LAT	2.73 DEG	AB	20.9 KM
A LONG	36.03 DEG	BC	5.3 KM	A LONG	36.17 DEG	BC	5.3 KM
B LAT	2.14 DEG	CD	20.9 KM	B LAT	2.08 DEG	CD	20.9 KM
B LONG	35.78 DEG	DA	5.3 KM	B LONG	35.92 DEG	DA	5.2 KM
C LAT	2.20 DEG	TILT DISTANCE		C LAT	2.14 DEG	TILT DISTANCE	
C LONG	35.62 DEG			C LONG	35.76 DEG		
D LAT	2.84 DEG			D LAT	2.79 DEG		
D LONG	35.86 DEG			D LONG	36.01 DEG		

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MISSION/
FRAME NO.

3018 YR, MO, DY 670215 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 'HR, 'MI, 'SEC 100112.61 ALT RT -0.0535 KM/SEC TILT ANG 0-37 DEG SUN AZIM 92.20 DEG LATITUDE 2.38 DEG
 LAT 2.39 DEG TILT AZIM 145.96 DEG INCID ANG 74.81 DEG LONGITUDE 36.11 DEG
 LONG 36.10 DEG SWING ANG 305.16 DEG EMISS ANG 0.38 DEG
 N.DEV. 339.22 DEG PHASE ANG 75.03 DEG
 ALPHA -0.23 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 2.88 DEG AB 47.5 KM
 A LONG 37.01 DEG BC 40.2 KM
 B LAT 1.41 DEG CD 47.3 KM
 B LONG 36.66 DEG DA 40.1 KM
 C LAT 1.89 DEG TILT DISTANCE 0.3
 C LONG 36.22 DEG
 D LAT 3.35 DEG
 D LONG 36.77 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 2.67 DEG AB 20.8 KM
 A LONG 36.31 DEG BC 5.2 KM
 B LAT 2.03 DEG CD 20.8 KM
 B LONG 36.06 DEG DA 5.2 KM
 C LAT 2.09 DEG TILT DISTANCE
 C LONG 35.90 DEG 3.9
 D LAT 2.74 DEG
 D LONG 36.15 DEG

MISSION/
FRAME NO.
3019 YR, MO, DY 670215 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 'HR, 'MI, 'SEC 100115.11 ALT RT 57.79 KM TILT ANG 0.50 DEG SUN AZIM 92.20 DEG LATITUDE 2.33 DEG
 LAT 2.34 DEG TILT AZIM 135.87 DEG INCID ANG 74.66 DEG LONGITUDE 36.25 DEG
 LONG 36.24 DEG SWING ANG 295.09 DEG EMISS ANG 0.52 DEG
 N.DEV. 339.22 DEG PHASE ANG 75.03 DEG
 ALPHA -0.38 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 2.82 DEG AB 47.4 KM
 A LONG 37.16 DEG BC 40.1 KM
 B LAT 1.36 DEG CD 47.2 KM
 B LONG 36.60 DEG DA 40.0 KM
 C LAT 1.83 DEG TILT DISTANCE 0.5
 C LONG 35.37 DEG
 D LAT 3.29 DEG
 D LONG 36.52 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 2.62 DEG AB 20.8 KM
 A LONG 36.45 DEG BC 5.2 KM
 B LAT 1.98 DEG CD 20.8 KM
 B LONG 36.21 DEG DA 5.2 KM
 C LAT 2.04 DEG TILT DISTANCE
 C LONG 36.05 DEG 6.3
 D LAT 2.68 DEG
 D LONG 36.29 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 92.20 DEG LATITUDE 2.38 DEG
 INCID ANG 74.81 DEG LONGITUDE 36.11 DEG
 EMISS ANG 0.38 DEG
 PHASE ANG 75.03 DEG
 ALPHA -0.23 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 92.20 DEG LATITUDE 2.33 DEG
 INCID ANG 74.66 DEG LONGITUDE 36.25 DEG
 EMISS ANG 0.52 DEG
 PHASE ANG 75.03 DEG
 ALPHA -0.38 DEG

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MISSION/

FRAME NO.

MISSION/		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3020	YR. MO. DY	670215	ALT 57°.67 KM ALT RT -0.0510 KM/SEC	TILT ANG 0°.64 DEG TILT AZIM 130°.29 DEG SWING ANG 289°.50 DEG N.DEV. -339°.21 DEG	SUN AZIM 92°.19 DEG INCID ANG. 74°.51 DEG EMISS ANG 0°.66 DEG PHASE ANG 75°.03 DEG ALPHA -0°.52 DEG	LATITUDE 2°.27 DEG LONGITUDE 36°.39 DEG
MEDIUM RESOLUTION						
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION			
A LAT	2.77 DEG	AB 47.3 KM	A LAT	2.56 DEG	SIDE LENGTH	CORNER COORDINATE
A LONG	37.30 DEG	BC 4.0 KM	A LONG	36.60 DEG	AB 20.7 KM	BC 5.2 KM
B LAT	1.31 DEG	CD 7.0 KM	B LAT	1.92 DEG	CD 20.7 KM	DA 5.2 KM
B LONG	36.75 DEG	DA 39.9 KM	B LONG	36.35 DEG	DA 5.2 KM	
C LAT	1.78 DEG	TILT DISTANCE	C LAT	1.98 DEG		
C LONG	35.51 DEG	0.7	C LONG	36.19 DEG	TILT DISTANCE	
D LAT	3.23 DEG		D LAT	2.62 DEG	6.7	
D LONG	36.06 DEG		D LONG	36.43 DEG		

MISSION/

FRAME NO.

MISSION/		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3321	YR. MO. DY	670215	ALT 57°.86 KM ALT RT 0.0420 KM/SEC	TILT ANG 11°.97 DEG TILT AZIM 111°.94 DEG SWING ANG 271°.38 DEG N.DEV. 339°.91 DEG	SUN AZIM 90°.77 DEG INCID ANG 63°.65 DEG EMISS ANG 12°.38 DEG PHASE ANG 75°.26 DEG ALPHA -11°.68 DEG	LATITUDE -1°.84 DEG LONGITUDE 47°.12 DEG
MEDIUM RESOLUTION						
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION			
A LAT	-1.29 DEG	AB 52.4 KM	A LAT	-1.54 DEG	SIDE LENGTH	CORNER COORDINATE
A LONG	48.13 DEG	BC 42.5 KM	A LONG	47.33 DEG	AB 21.5 KM	BC 5.5 KM
B LAT	-2.91 DEG	CD 45.0 KM	B LAT	-2.20 DEG	CD 21.1 KM	DA 5.5 KM
B LONG	47.53 DEG	DA 42.3 KM	B LONG	47.08 DEG	DA 5.5 KM	
C LAT	-2.31 DEG	TILT DISTANCE	C LAT	-2.13 DEG		
C LONG	46.26 DEG	1.6 KM	C LONG	46.91 DEG	TILT DISTANCE	
D LAT	-0.91 DEG		D LAT	-1.48 DEG	29.2	
D LONG	46.78 DEG		D LONG	47.16 DEG		

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MISSION/

FRAME NO.

TIME
YR-MO-DY
HR-MI-SECS/C POSITION
ALT 57.95 KM
ALT RT 0.0432 KM/SEC
LAT -1.73 DEG
LONG 46.88 DEGS/C ORIENTATION
TILT ANG 12.11 DEG
TILT AZIM 111.93 DEG
SWING ANG 271.36 DEG
N.DEV. 339.92 DEGPHOTO ILLUMINATION
SUN AZIM 90.74 DEG
INCID ANG 63.52 DEG
EMISS ANG 12.52 DEG
PHASE ANG 75.26 DEG
ALPHA -11.82 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -1.34 DEG	AB 52.6 KM
A LONG 48.27 DEG	BC 42.6 KM
B LAT -2.97 DEG	CD 45.1 KM
B LONG 47.67 DEG	DA 42.4 KM
C LAT -2.36 DEG	TILT DISTANCE
C LONG 46.40 DEG	17.0
D LAT -0.96 DEG	
D LONG 46.92 DEG	

PHOTO ILLUMINATION
PRINCIPAL POINT
LATITUDE -1.89 DEG
LONGITUDE 47.26 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -1.59 DEG	AB 21.5 KM
A LONG 47.47 DEG	BC 5.5 KM
B LAT -2.25 DEG	CD 21.1 KM
B LONG 47.22 DEG	DA 5.5 KM
C LAT -2.18 DEG	TILT DISTANCE
C LONG 47.05 DEG	30.8
D LAT -1.53 DEG	
D LONG 47.30 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -1.64 DEG	AB 21.6 KM
A LONG 47.61 DEG	BC 5.5 KM
B LAT -2.31 DEG	CD 21.2 KM
B LONG 47.36 DEG	DA 5.5 KM
C LAT -2.24 DEG	TILT DISTANCE
C LONG 47.19 DEG	32.4
D LAT -1.58 DEG	
D LONG 47.44 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -1.94 DEG	AB 21.6 KM
A LONG 47.37 DEG	BC 5.5 KM
B LAT -2.68 DEG	CD 21.1 KM
B LONG 47.35 DEG	DA 5.5 KM
C LAT -2.62 DEG	TILT DISTANCE
C LONG 47.19 DEG	32.4
D LAT -1.97 DEG	
D LONG 47.30 DEG	

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TIME
YR-MO-DY
HR-MI-SECS/C POSITION
ALT 58.07 KM
ALT RT 0.0444 KM/SEC
LAT -1.79 DEG
LONG 47.01 DEGS/C ORIENTATION
TILT ANG 12.26 DEG
TILT AZIM 111.91 DEG
SWING ANG 271.35 DEG
N.DEV. 339.94 DEGPHOTO ILLUMINATION
SUN AZIM 90.71 DEG
INCID ANG 63.37 DEG
EMISS ANG 12.68 DEG
PHASE ANG 75.26 DEG
ALPHA -11.97 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -1.39 DEG	AB 52.8 KM
A LONG 48.42 DEG	BC 42.7 KM
B LAT -3.03 DEG	CD 45.1 KM
B LONG 47.81 DEG	DA 42.6 KM
C LAT -2.41 DEG	TILT DISTANCE
C LONG 46.54 DEG	17.2
D LAT -1.02 DEG	
D LONG 47.06 DEG	

PHOTO ILLUMINATION
PRINCIPAL POINT
LATITUDE -1.94 DEG
LONGITUDE 47.40 DEG

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MISSION/
FRAME NO.

3026 YR, MO, DY 670215 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC 1332 5.81 ALT RT 56.09 KN TILT ANG 3.57 DEG SUN AZIM 91.27 DEG LATITUDE ~0.85 DEG
LAT -0.74 DEG TILT AZIM 196.07 DEG INCID ANG 66.91 DEG LONGITUDE 42.12 DEG
LONG 42.16 DEG SWING ANG 355.42 DEG EMISS ANG 3.79 DEG
N.DEV. 339.32 DEG PHASE ANG 65.99 DEG
ALPHA Q.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT ~Q.38 DEG AB 46.2 KM
A LONG 42.98 DEG BC 40.0 KM
B LAT -1.82 DEG CD 46.1 KM
B LONG 42.47 DEG DA 37.9 KM
C LAT -1.35 DEG TILT DISTANCE
C LONG 41.23 DEG 5.0
D LAT 0.06 DEG
D LONG 41.80 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.57 DEG AB 20.3 KM
A LONG 42.32 DEG BC 5.1 KM
B LAT -1.20 DEG CD 20.2 KM
B LONG 42.08 DEG DA 5.0 KM
C LAT -1.14 DEG TILT DISTANCE
C LONG 41.92 DEG 39.1
D LAT -0.51 DEG
D LONG 42.16 DEG

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MISSION/
FRAME NO.

3027 YR, MO, DY 670215 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC 1332 8.11 ALT RT 56.14 KN TILT ANG 3.69 DEG SUN AZIM 91.24 DEG LATITUDE ~0.93 DEG
LAT -0.79 DEG TILT AZIM 193.89 DEG INCID ANG 66.77 DEG LONGITUDE 42.26 DEG
LONG 42.29 DEG SWING ANG 353.24 DEG EMISS ANG 3.81 DEG
N.DEV. 339.32 DEG PHASE ANG 65.99 DEG
ALPHA Q.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT ~G.43 DEG AB 46.3 KM
A LONG 43.11 DEG BC 40.0 KM
B LAT -1.87 DEG CD 46.1 KM
B LONG 42.61 DEG DA 37.9 KM
C LAT -1.40 DEG TILT DISTANCE
C LONG 41.37 DEG 5.0
D LAT 0.01 DEG
D LONG 41.94 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.62 DEG AB 20.3 KM
A LONG 42.45 DEG BC 5.1 KM
B LAT -1.25 DEG CD 20.2 KM
B LONG 42.22 DEG DA 5.0 KM
C LAT -1.19 DEG TILT DISTANCE
C LONG 42.05 DEG 39.1
D LAT -0.56 DEG
D LONG 42.30 DEG

MISSION/
FRAME NO.

3027 YR, MO, DY 670215 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC 1332 8.11 ALT RT 0.0190 KN TILT ANG 3.69 DEG SUN AZIM 91.24 DEG LATITUDE ~0.93 DEG
LAT -0.79 DEG TILT AZIM 193.89 DEG INCID ANG 66.77 DEG LONGITUDE 42.26 DEG
LONG 42.29 DEG SWING ANG 353.24 DEG EMISS ANG 3.81 DEG
N.DEV. 339.32 DEG PHASE ANG 65.99 DEG
ALPHA Q.73 DEG

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MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR	MO	DY	ALT	56.18 KM	ALT	TILT ANG	3.71 DEG	SUN AZIM	91.22 DEG	LATITUDE	-1.95 DEG			
HR	MI	SEC	133210.41	0.0202 KM/SEC	ALT RT	TILT AZIM	191.73 DEG	INCID ANG	68.63 DEG	LONGITUDE	42.19 DEG			
			LAT	-0.84 DEG		SWING ANG	551.08 DEG	EMISS ANG	3.83 DEG					
			LONG	42.42 DEG	N.DEV.		339.32 DEG	PHASE ANG	65.99 DEG					
								ALPHA	0.59 DEG					
MEDIUM RESOLUTION														
MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR	MO	DY	ALT	56.23 KM	ALT	TILT ANG	3.73 DEG	SUN AZIM	91.20 DEG	LATITUDE	-1.99 DEG			
HR	MI	SEC	133212.61	0.0213 KM/SEC	ALT RT	TILT AZIM	189.69 DEG	INCID ANG	68.50 DEG	LONGITUDE	42.52 DEG			
			LAT	-0.88 DEG		SWING ANG	349.04 DEG	EMISS ANG	3.85 DEG					
			LONG	42.54 DEG	N.DEV.		339.33 DEG	PHASE ANG	65.99 DEG					
								ALPHA	0.45 DEG					
MEDIUM RESOLUTION														
MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR	MO	DY	ALT	56.23 KM	ALT	TILT ANG	3.73 DEG	SUN AZIM	91.20 DEG	LATITUDE	-1.99 DEG			
HR	MI	SEC	133212.61	0.0213 KM/SEC	ALT RT	TILT AZIM	189.69 DEG	INCID ANG	68.50 DEG	LONGITUDE	42.52 DEG			
			LAT	-0.88 DEG		SWING ANG	349.04 DEG	EMISS ANG	3.85 DEG					
			LONG	42.54 DEG	N.DEV.		339.33 DEG	PHASE ANG	65.99 DEG					
								ALPHA	0.45 DEG					
HIGH RESOLUTION														
MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR	MO	DY	ALT	56.4 KM	ALT	TILT ANG	3.73 DEG	SUN AZIM	91.20 DEG	LATITUDE	-1.99 DEG			
HR	MI	SEC	133212.61	0.0213 KM/SEC	ALT RT	TILT AZIM	189.69 DEG	INCID ANG	68.50 DEG	LONGITUDE	42.52 DEG			
			LAT	-0.88 DEG		SWING ANG	349.04 DEG	EMISS ANG	3.85 DEG					
			LONG	42.54 DEG	N.DEV.		339.33 DEG	PHASE ANG	65.99 DEG					
								ALPHA	0.45 DEG					
MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR	MO	DY	ALT	56.4 KM	ALT	TILT ANG	3.73 DEG	SUN AZIM	91.20 DEG	LATITUDE	-1.99 DEG			
HR	MI	SEC	133212.61	0.0213 KM/SEC	ALT RT	TILT AZIM	189.69 DEG	INCID ANG	68.50 DEG	LONGITUDE	42.52 DEG			
			LAT	-0.88 DEG		SWING ANG	349.04 DEG	EMISS ANG	3.85 DEG					
			LONG	42.54 DEG	N.DEV.		339.33 DEG	PHASE ANG	65.99 DEG					
								ALPHA	0.45 DEG					
HIGH RESOLUTION														
MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR	MO	DY	ALT	56.4 KM	ALT	TILT ANG	3.73 DEG	SUN AZIM	91.20 DEG	LATITUDE	-1.99 DEG			
HR	MI	SEC	133212.61	0.0213 KM/SEC	ALT RT	TILT AZIM	189.69 DEG	INCID ANG	68.50 DEG	LONGITUDE	42.52 DEG			
			LAT	-0.88 DEG		SWING ANG	349.04 DEG	EMISS ANG	3.85 DEG					
			LONG	42.54 DEG	N.DEV.		339.33 DEG	PHASE ANG	65.99 DEG					
								ALPHA	0.45 DEG					

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MISSION /

FRAME NO.

3030 YR-MD-DY
HR-MI-SEC 133214.91

TIME

S/C POSITION
ALT 56.28 KM
ALT RT 0.0225 KM/SEC
LAT -0.94 DEG
LONG 42.68 DEGS/C ORIENTATION
TILT ANG 3.76 DEG
TILT AZIM 187.59 DEG
SWING ANG 346.93 DEG
N.DEV. 339.33 DEGPHOTO: ILLUMINATION
SUN AZIM 91.18 DEG
INCID ANG 66.37 DEG
EMISS ANG 3.89 DEG
PHASE ANG 65.99 DEG
ALPHA 0.32 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.58 DEG	AB 46.5 KM
A LONG 43.52 DEG	BC 40.1 KM
B LAT -2.03 DEG	CD 46.1 KM
B LONG 43.61 DEG	DA 38.0 KM
C LAT -1.56 DEG	TILT DISTANCE 5.1
C LONG 41.77 DEG	
D LAT -C 14 DEG	
D LONG 42.34 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.78 DEG	AB 20.3 KM
A LONG 42.65 DEG	BC 5.2 KM
B LAT -1.41 DEG	CD 29.2 KM
B LONG 42.62 DEG	DA 5.0 KM
C LAT -1.34 DEG	TILT DISTANCE 40.1
C LONG 42.46 DEG	
D LAT -0.72 DEG	
D LONG 42.70 DEG	

MISSION /

FRAME NO.

3031

YR-MD-DY

HR-MI-SEC

TIME

133217.21

S/C POSITION

ALT 56.33 KM

ALT RT 0.0236 KM/SEC

LAT -0.99 DEG

LONG 42.81 DEG

N.DEV.

S/C ORIENTATION

TILT ANG 3.80 DEG

TILT AZIM 185.52 DEG

SWING ANG 344.87 DEG

N.DEV. 339.33 DEG

PHOTO: ILLUMINATION
SUN AZIM 91.15 DEG
INCID ANG 66.23 DEG
EMISS ANG 3.92 DEG
PHASE ANG 65.99 DEG
ALPHA 0.18 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.63 DEG	AB 46.5 KM
A LONG 43.66 DEG	BC 40.2 KM
B LAT -2.09 DEG	CD 45.1 KM
B LONG 43.15 DEG	DA 38.1 KM
C LAT -1.61 DEG	TILT DISTANCE 5.1
C LONG 41.91 DEG	
D LAT -0.19 DEG	
D LONG 42.48 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.83 DEG	AB 20.4 KM
A LONG 42.99 DEG	BC 5.2 KM
B LAT -1.46 DEG	CD 20.3 KM
B LONG 42.76 DEG	DA 5.0 KM
C LAT -1.40 DEG	TILT DISTANCE 40.4
C LONG 42.60 DEG	
D LAT -0.77 DEG	
D LONG 42.83 DEG	

PRINCIPAL POINT
LATITUDE -1.06 DEG
LONGITUDE 42.66 DEGPRINCIPAL POINT
LATITUDE -1.11 DEG
LONGITUDE 42.80 DEG

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MISSION/ FRAME NO.		TIME YR, MO, DY HR, MIN, SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION TILT ANG SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMIS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE	PAGE
3032	670215	133219.51	56.39 KM -1.04 DEG 42.94 DEG	3.84 DEG 342.84 DEG 339.33 DEG	91.3 DEG 66.03 DEG 3.95 DEG 65.99 DEG 0.04 DEG	-1.16 DEG 42.93 DEG	223
MEDIUM RESOLUTION							
			CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION		
			A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	-0.68 DEG 43.79 DEG -2.14 DEG 43.28 DEG -1.66 DEG 42.04 DEG -0.25 DEG -42.61 DEG	AB 46.7 KM BC 40.2 KM CD 46.1 KM DA 38.1 KM TILT DISTANCE 5.2	CORNER COORDINATE	SIDE LENGTH
						A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	-0.88 DEG 43.13 DEG -1.51 DEG 42.89 DEG -1.45 DEG 42.73 DEG -0.82 DEG 42.97 DEG
PHOTO ILLUMINATION							
2033	670215	170114.31	S/C POSITION ALT RT. LAT LONG	S/C ORIENTATION TILT ANG SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMIS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE	PAGE
			56.67 KM 0.0359 KM/SEC -1.56 DEG 42.28 DEG	19.72 DEG 22.48 DEG 181.55 DEG 337.73 DEG	91.21 DEG 64.73 DEG 20.39 DEG 73.39 DEG -10.04 DEG	-0.94 DEG 42.54 DEG	223
MEDIUM RESOLUTION							
			CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION		
			A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	-0.26 DEG 43.68 DEG -1.86 DEG 42.62 DEG -1.43 DEG 41.71 DEG -0.31 DEG 4E.15 DEG	AB 54.7 KM BC 36.3 KM CD 54.3 KM DA 49.4 KM TILT DISTANCE 28.7	CORNER COORDINATE	SIDE LENGTH
						A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	-3.59 DEG 42.77 DEG -1.31 DEG 42.49 DEG -1.25 DEG 42.33 DEG -0.52 DEG 42.59 DEG
PHOTO ILLUMINATION							

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MISSION/
FRAME NO.

3034 YR•MO•DY 670215 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR•MI•SEC 170116.71 ALT RT 56•75 KM TILT ANG 19•73 DEG SUN AZIM 91•19 DEG LATITUDE -0•99 DEG
LAT -0•0372 KM/SEC TILT AZIM 22•89 DEG INCID ANG 64•58 DEG LONGITUDE 42•68 DEG
LONG 42•42 DEG SWING ANG 181•99 DEG SWISS ANG 23•43 DEG
N.DEV. 337•74 DEG PHASE ANG 73•39 DEG
ALPHA -10•18 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0•31 DEG	AB 54•9 KM
A LONG 43•82 DEG	BC 35•3 KM
B LAT -1•91 DEG	CD 54•3 KM
B LONG 42•58 DEG	DA 49•5 KM
C LAT -1•48 DEG	TILT DISTANCE 28•7
C LONG 41•85 DEG	
D LAT 0•26 DEG	
D LONG 42•29 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -3•64 DEG	AB 23•3 KM
A LONG 42•92 DEG	BC 5•1 KM
B LAT -1•36 DEG	CD 23•3 KM
B LONG 42•63 DEG	DA 5•9 KM
C LAT -1•30 DEG	TILT DISTANCE 18•5
C LONG 42•47 DEG	
D LAT -9•58 DEG	
D LONG 42•73 DEG	

MISSION/
FRAME NO.

3035 YR•MO•DY 670215 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR•MI•SEC 170115•31 ALT RT 56•84 KM TILT ANG 19•73 DEG SUN AZIM 91•16 DEG LATITUDE -1•35 DEG
LAT -0•0363 KM/SEC TILT AZIM 23•28 DEG INCID ANG 64•45 DEG LONGITUDE 42•81 DEG
LONG 42•55 DEG SWING ANG 182•40 DEG SWISS ANG 20•41 DEG
N.DEV. 337•75 DEG PHASE ANG 73•39 DEG
ALPHA -10•31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0•36 DEG	AB 55•0 KM
A LONG 43•96 DEG	BC 35•4 KM
B LAT -1•97 DEG	CD 54•4 KM
B LONG 43•11 DEG	DA 49•6 KM
C LAT -1•54 DEG	TILT DISTANCE 26•7
C LONG 41•99 DEG	
C LAT 0•21 DEG	
D LONG 42•43 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0•69 DEG	AB 23•3 KM
A LONG 43•05 DEG	BC 5•1 KM
B LAT -1•41 DEG	CD 23•3 KM
B LONG 42•76 DEG	DA 5•9 KM
C LAT -1•35 DEG	TILT DISTANCE 18•6
C LONG 42•61 DEG	
D LAT -1•63 DEG	
D LONG 42•87 DEG	

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MISSION/

FRAME NO.

3026

YR.MD.DY

670215

HR.MI.SEC

170121.31

S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION		
ALT	56.93 KM	TILT ANG	19.74 DEG	SUN AZIM	91.14 DEG	LATITUDE	-1.10 DEG	
ALT RT	0.0395 KM/SEC	TILT AZIM	23.67 DEG	INCID ANG	64.31 DEG	LONGITUDE	42.95 DEG	
LAT	-1.72 DEG	SWING ANG	182.82 DEG	EMISS ANG	20.41 DEG			
LONG	42.68 DEG	N.DEV.	337.77 DEG	PHASE ANG	73.39 DEG			
				ALPHA	-10.45 DEG			

MISSION/

FRAME NO.

3027

YR.MD.DY

670215

HR.MI.SEC

20452.51

S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION		
ALT	395.66 KM	TILT ANG	5.15 DEG	SUN AZIM	7.43 DEG	LATITUDE	-20.45 DEG	
ALT RT	0.0484 KM/SEC	TILT AZIM	230.25 DEG	INCID ANG	19.10 DEG	LONGITUDE	102.92 DEG	
LAT	-19.70 DEG	SWING ANG	149.23 DEG	EMISS ANG	6.33 DEG			
LONG	103.89 DEG	N.DEV.	98.48 DEG	PHASE ANG	15.09 DEG			
				ALPHA	3.24 DEG			

MISSION/

FRAME NO.

3037

YR.MD.DY

670215

HR.MI.SEC

20452.51

S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION		
ALT	395.66 KM	TILT ANG	5.15 DEG	SUN AZIM	7.43 DEG	LATITUDE	-20.45 DEG	
ALT RT	0.0484 KM/SEC	TILT AZIM	230.25 DEG	INCID ANG	19.10 DEG	LONGITUDE	102.92 DEG	
LAT	-19.70 DEG	SWING ANG	149.23 DEG	EMISS ANG	6.33 DEG			
LONG	103.89 DEG	N.DEV.	98.48 DEG	PHASE ANG	15.09 DEG			
				ALPHA	3.24 DEG			

S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION		
ALT	330.7 KM	TILT ANG	19.74 DEG	SUN AZIM	91.14 DEG	LATITUDE	-1.10 DEG	
ALT RT	0.0395 KM/SEC	TILT AZIM	23.67 DEG	INCID ANG	64.31 DEG	LONGITUDE	42.95 DEG	
LAT	-1.72 DEG	SWING ANG	182.82 DEG	EMISS ANG	20.41 DEG			
LONG	42.68 DEG	N.DEV.	337.77 DEG	PHASE ANG	73.39 DEG			
				ALPHA	-10.45 DEG			

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MISSION /

FRAME NO.

3038 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT RT 56.89 KM TILT ANG 56.82 DEG SUN AZIM 89.32 DEG LATITUDE -5.00 DEG
 HR, MI, SEC 2:35:43.01 ALT RT 0.0475 KM/SEC TILT AZIM 200.98 CEG LONGITUDE 38.71 DEG
 LAT -2.20 DEG SWING ANG 358.98 DEG EMISS ANG 59.82 DEG
 LONG 39.79 DEG N.DEV. 321.55 DEG PHASE ANG 59.84 DEG
 ALPHA. -21.37 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -3.71 DEG AB 73.7 KM
 A LONG 40.02 DEG BC 188.5 KM
 B LAT -12.13 DEG CD 370.0 KM
 B LONG 35.38 DEG DA 44.6 KM
 C LAT -12.78 DEG TILT DISTANCE
 C LONG 20.44 DEG 21.8
 D LAT -3.15 DEG
 D LONG 38.66 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -4.14 DEG AB 88.4 KM
 A LONG 39.18 DEG BC 14.4 KM
 B LAT -6.90 DEG CD 87.8 KM
 B LONG 38.21 DEG DA 7.5 KM
 C LAT -6.70 DEG TILT DISTANCE
 C LONG 37.78 DEG 32.4
 D LAT -4.05 DEG
 D LONG 38.95 DEG

MISSION /

FRAME NO.

3039 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT RT 52.69 KM TILT ANG 67.07 DEG SUN AZIM 91.55 DEG LATITUDE 0.07 DEG
 HR, MI, SEC 03:24:46.11 ALT RT -0.0296 KM/SEC TILT AZIM 257.23 DEG LONGITUDE 24.92 DEG
 LAT 1.08 DEG SWING ANG 19.39 DEG EMISS ANG 71.61 DEG
 LONG 29.34 DEG N.DEV. 293.50 DEG PHASE ANG 14.87 DEG
 ALPHA. 45.23 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.36 DEG AB 71.2 KM
 A LONG 27.57 DEG BC 424.9 KM
 B LAT -6.91 DEG CD 128.6 KM
 B LONG 18.14 DEG DA 56.7 KM
 C LAT -1.02 DEG TILT DISTANCE
 C LONG 26.17 DEG 88.4
 D LAT 1.84 DEG
 D LONG 26.82 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.53 DEG AB 284.1 KM
 A LONG 26.66 DEG BC 375.1 KM
 B LAT -2.80 DEG CD 291.4 KM
 B LONG 17.88 DEG DA 10.8 KM
 C LAT -1.84 DEG TILT DISTANCE
 C LONG 16.92 DEG 40.8
 D LAT 0.77 DEG
 D LONG 26.40 DEG

MISSION /

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT RT 52.69 KM TILT ANG 67.07 DEG SUN AZIM 91.55 DEG LATITUDE 0.07 DEG
 HR, MI, SEC 03:24:46.11 ALT RT -0.0296 KM/SEC TILT AZIM 257.23 DEG LONGITUDE 24.92 DEG
 LAT 1.08 DEG SWING ANG 19.39 DEG EMISS ANG 71.61 DEG
 LONG 29.34 DEG N.DEV. 293.50 DEG PHASE ANG 14.87 DEG
 ALPHA. 45.23 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

YR, MO, DY

HR, MI, SEC

TIME

S/C POSITION

ALT

59.43 KM

TILT ANG

17.08 DEG

INCID ANG

92.09 DEG

LAT AZIM

206.96 DEG

SWING ANG

7.14 DEG

NDEV.

339.05 DEG

PHASE ANG

73.90 DEG

ALPHA

6.60 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 4.09 DEG AB 52.8 KM

A LONG 29.36 DEG BC 50.5 KM

B LAT 2.34 DEG CD 56.7 KM

B LONG 15.51 DEG DA 36.9 KM

C LAT 2.86 DEG TILT DISTANCE

C LONG 18.33 DEG 24.5

D LAT 4.64 DEG

D LONG 15.15 DEG

MISSION/

FRAME NO.

YR, MO, DY

HR, MI, SEC

TIME

S/C POSITION

ALT

59.43 KM

TILT ANG

17.08 DEG

INCID ANG

92.09 DEG

LAT AZIM

204.92 DEG

SWING ANG

4.96 DEG

NDEV.

338.98 DEG

PHASE ANG

73.90 DEG

ALPHA

5.92 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 3.86 DEG AB 54.1 KM

A LONG 20.98 DEG BC 49.7 KM

B LAT 2.13 DEG CD 55.4 KM

B LONG 20.53 DEG DA 38.2 KM

C LAT 2.56 DEG TILT DISTANCE

C LONG 16.98 DEG 24.4

D LAT 4.30 DEG

D LONG 19.79 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT'

LATITUDE 3.57 DEG

LONGITUDE 19.49 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT'

LATITUDE 3.34 DEG

LONGITUDE 20.11 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT'

LATITUDE 3.09 DEG

LONGITUDE 8.60 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT'

LATITUDE 3.00 DEG

LONGITUDE 20.07 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT'

LATITUDE 2.93 DEG

LONGITUDE 23.6 KM

PHOTO ILLUMINATION

PRINCIPAL POINT'

LATITUDE 5.3 KM

LONGITUDE 20.07 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 3.89 DEG AB 23.9 KM

A LONG 19.70 DEG BC 6.1 KM

B LAT 3.14 DEG CD 24.0 KM

B LONG 19.44 DEG DA 5.4 KM

C LAT 3.21 DEG TILT DISTANCE

C LONG 19.25 DEG 8.60

D LAT 3.95 DEG

D LONG 19.53 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 3.66 DEG AB 23.5 KM

B LAT 2.93 DEG BC 6.0 KM

B LONG 20.07 DEG DA 5.3 KM

C LAT 2.99 DEG TILT DISTANCE

C LONG 19.88 DEG 8.73

D LAT 3.72 DEG

D LONG 20.16 DEG

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MISSION/

FRAME NO.

3042
YR, MO, DY
HR, MI, SECTIME
670216
065125.21S/C POSITION
ALT 56.49 KM
ALT RT -0.0877 KM/SEC
.LAT 3.67 DEG
LONG 20.96 DEG
N.DEV.S/C ORIENTATION
TILT ANG 17.05 DEG
TILT AZIM 202.90 DEG
SWING ANG 2.81 DEG
N.DEV. 338.92 DEGPHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 79.63 DEG
EMISS ANG 17.64 DEG
PHASE ANG 73.90 DEG
ALPHA 5.26 DEG

MISSION/

FRAME NO.

3043
YR, MO, DY
HR, MI, SECTIME
670216
065125.41S/C POSITION
ALT 57.62 KM
ALT RT -0.0825 KM/SEC
.LAT 3.45 DEG
LONG 21.54 DEG
N.DEV.S/C ORIENTATION
TILT ANG 17.04 DEG
TILT AZIM 200.91 DEG
SWING ANG 0.69 DEG
N.DEV. 338.86 DEGPHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 79.02 DEG
EMISS ANG 17.62 DEG
PHASE ANG 73.90 DEG
ALPHA 4.61 DEG

MISSION/

FRAME NO.

3043
YR, MO, DY
HR, MI, SECTIME
670216
065125.41S/C POSITION
ALT 57.62 KM
ALT RT -0.0825 KM/SEC
.LAT 3.45 DEG
LONG 21.54 DEG
N.DEV.S/C ORIENTATION
TILT ANG 17.04 DEG
TILT AZIM 200.91 DEG
SWING ANG 0.69 DEG
N.DEV. 338.86 DEGPHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 79.02 DEG
EMISS ANG 17.62 DEG
PHASE ANG 73.90 DEG
ALPHA 4.61 DEG

MISSION/

FRAME NO.

3043
YR, MO, DY
HR, MI, SECTIME
670216
065125.41S/C POSITION
ALT 57.62 KM
ALT RT -0.0825 KM/SEC
.LAT 3.45 DEG
LONG 21.54 DEG
N.DEV.S/C ORIENTATION
TILT ANG 17.04 DEG
TILT AZIM 200.91 DEG
SWING ANG 0.69 DEG
N.DEV. 338.86 DEGPHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 79.02 DEG
EMISS ANG 17.62 DEG
PHASE ANG 73.90 DEG
ALPHA 4.61 DEG

MISSION/

FRAME NO.

3043
YR, MO, DY
HR, MI, SECTIME
670216
065125.41S/C POSITION
ALT 57.62 KM
ALT RT -0.0825 KM/SEC
.LAT 3.45 DEG
LONG 21.54 DEG
N.DEV.S/C ORIENTATION
TILT ANG 17.04 DEG
TILT AZIM 200.91 DEG
SWING ANG 0.69 DEG
N.DEV. 338.86 DEGPHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 79.02 DEG
EMISS ANG 17.62 DEG
PHASE ANG 73.90 DEG
ALPHA 4.61 DEG

MISSION/

FRAME NO.

3043
YR, MO, DY
HR, MI, SECTIME
670216
065125.41S/C POSITION
ALT 57.62 KM
ALT RT -0.0825 KM/SEC
.LAT 3.45 DEG
LONG 21.54 DEG
N.DEV.S/C ORIENTATION
TILT ANG 17.04 DEG
TILT AZIM 200.91 DEG
SWING ANG 0.69 DEG
N.DEV. 338.86 DEGPHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 79.02 DEG
EMISS ANG 17.62 DEG
PHASE ANG 73.90 DEG
ALPHA 4.61 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3044	670216 YR, MO, DY HR, MI, SEC	ALT 51.73 KM ALT RT -0.0163 KM/SEC LAT 0.59 DEG LONG 27.06 DEG	ALT AZIM 3.69 DEG TILT AZIM 18.02 DEG SWING ANG 176.97 DEG N.DEV. 338.91 DEG	SUN AZIM 91.81 DEG INCID ANG 71.41 DEG EMISS ANG 3.81 DEG PHASE ANG 72.51 DEG ALPHA -1.14 DEG	LATITUDE 9.59 DEG LONGITUDE 27.14 DEG
MEDIUM RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 1.14 DEG	AB 42.5 KM	A LAT 3.95 DEG	AB 18.7 KM		
A LONG 27.93 DEG	BC 34.9 KM	A LONG 27.38 DEG	BC 4.6 KM		
B LAT -0.15 DEG	CD 42.6 KM	B LAT 3.38 DEG	CD 18.7 KM		
B LONG 27.39 DEG	DA 36.9 KM	B LONG 27.06 DEG	DA 4.7 KM		
C LAT 0.26 DEG	TILT DISTANCE 5.2	C LAT 3.43 DEG	TILT DISTANCE 39.3		
C LONG 26.32 DEG		C LONG 26.91 DEG			
D LAT 1.58 DEG		D LAT 1.01 DEG			
D LONG 26.79 DEG		D LONG 27.13 DEG			
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 0.95 DEG	AB 18.7 KM				
A LONG 27.41 DEG	BC 4.6 KM				
B LAT 0.33 DEG	CD 18.7 KM				
B LONG 27.19 DEG	DA 4.7 KM				
C LAT 0.38 DEG	TILT DISTANCE 39.3				
C LONG 27.04 DEG					
D LAT 0.96 DEG					
D LONG 27.26 DEG					
MEDIUM RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 1.09 DEG	AB 42.5 KM	A LAT 0.90 DEG	AB 18.7 KM		
A LONG 28.06 DEG	BC 34.9 KM	A LONG 27.41 DEG	BC 4.6 KM		
B LAT -0.20 DEG	CD 42.5 KM	B LAT 0.33 DEG	CD 18.7 KM		
B LONG 27.52 DEG	DA 36.9 KM	B LONG 27.19 DEG	DA 4.7 KM		
C LAT 0.21 DEG	TILT DISTANCE 5.2	C LAT 0.38 DEG	TILT DISTANCE 39.3		
C LONG 26.45 DEG		C LONG 27.04 DEG			
D LAT 1.53 DEG		D LAT 0.96 DEG			
D LONG 26.92 DEG		D LONG 27.26 DEG			
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 0.95 DEG	AB 18.7 KM				
A LONG 27.41 DEG	BC 4.6 KM				
B LAT 0.33 DEG	CD 18.7 KM				
B LONG 27.19 DEG	DA 4.7 KM				
C LAT 0.38 DEG	TILT DISTANCE 39.3				
C LONG 27.04 DEG					
D LAT 0.96 DEG					
D LONG 27.26 DEG					

MISSION/
FRAME NO.

3045
670220
YR, MO, DY
HR, MI, SEC

TIME
102220.21

S/C POSITION

ALT 51.70 KM
ALT RT -0.0152 KM/SEC
LAT 0.54 DEG
LONG 27.19 DEG

TILT ANG 3.69 DEG
TILT AZIM 20.12 DEG
SWING ANG 179.07 DEG
N.DEV. 338.91 DEG

PHOTO ILLUMINATION

SUN AZIM 91.79 DEG
INCID ANG 71.27 DEG
EMISS ANG 3.80 DEG
PHASE ANG 72.51 DEG
ALPHA -1.27 DEG

PRINCIPAL POINT

LATITUDE 9.64 DEG
LONGITUDE 27.23 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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04/19/71

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MISSION/
FRAME NO.3048
YR, MO, DY
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	TILT ANG	SUN AZIM	LATITUDE	0.49 DEG	LONGITUDE	27.51 DEG
670216	51.61 KM	3.71 DEG	91.75 DEG	SUN AZIM	0.49 DEG	LATITUDE	0.49 DEG
102226.81	ALT RT -0.0118 KM/SEC	TILT AZIM 26.39 DEG	INCID ANG 70.92 DEG	INCID ANG	0.44 DEG	LONGITUDE	27.51 DEG
	LAT 0.39 DEG	SWING ANG 1.85.35 DEG	EMISS ANG 3.92 DEG	EMISS ANG	0.44 DEG		
	LONG 27.56 DEG	N.DEV. 338.91 DEG	PHASE ANG 72.51 DEG	PHASE ANG	0.44 DEG		
			ALPHA -1.66 DEG	ALPHA	-1.66 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C.55 DEG	AB 42.5 KM
A LONG 28.45 DEG	BC 34.8 KM
B LAT -0.35 DEG	CD 42.4 KM
B LONG 27.91 DEG	DA 36.3 KM
C LAT 0.06 DEG	TILT DISTANCE 5.2
C LONG 26.84 DEG	
D LAT 1.38 DEG	
D LONG 27.31 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.75 DEG	AB 1.8.6 KM
A LONG 27.80 DEG	BC 4.6 KM
B LAT 0.18 DEG	CD 1.8.6 KM
B LONG 27.58 DEG	DA 4.7 KM
C LAT 0.23 DEG	TILT DISTANCE
C LONG 27.43 DEG	
D LAT 0.81 DEG	
D LONG 27.65 DEG	

MISSION/
FRAME NO.3049
YR, MO, DY
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	TILT ANG	SUN AZIM	LATITUDE	0.44 DEG	LONGITUDE	27.74 DEG
670216	51.58 KM	3.72 DEG	91.73 DEG	SUN AZIM	0.44 DEG	LATITUDE	0.44 DEG
102229.01	ALT RT -0.0106 KM/SEC	TILT AZIM 28.46 DEG	INCID ANG 79.75 DEG	INCID ANG	0.44 DEG	LONGITUDE	27.74 DEG
	LAT 0.34 DEG	SWING ANG 1.87.42 DEG	EMISS ANG 3.83 DEG	EMISS ANG	0.44 DEG		
	LONG 27.59 DEG	N.DEV. 338.91 DEG	PHASE ANG 72.51 DEG	PHASE ANG	0.44 DEG		
			ALPHA -1.79 DEG	ALPHA	-1.79 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C.90 DEG	AB 42.5 KM
A LONG 28.58 DEG	BC 34.8 KM
B LAT -0.40 DEG	CD 42.3 KM
B LONG 28.24 DEG	DA 36.8 KM
C LAT 0.01 DEG	TILT DISTANCE 5.2
C LONG 26.57 DEG	
D LAT 1.23 DEG	
D LONG 27.44 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.79 DEG	AB 1.8.6 KM
A LONG 27.93 DEG	BC 4.6 KM
B LAT 0.13 DEG	CD 1.8.6 KM
B LONG 27.71 DEG	DA 4.7 KM
C LAT 0.18 DEG	TILT DISTANCE
C LONG 27.56 DEG	
D LAT 0.76 DEG	
D LONG 27.78 DEG	

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MISSION/
FRAME NO.3053
YR+MO+DY
HR+MI+SEC

TIME

S/C POSITION
 ALT 51°56' KM
 ALT RT -0.3095 KM/SEC
 LAT 0.29 DEG
 LONG 27.82 DEG
 N.DEV. 338.91 DEG

S/C ORIENTATION
 TILT ANG 7°74 DEG
 TILT AZIM 30°51 DEG
 SWING ANG 189.48 DEG
 N.DEV. 338.91 DEG

PHOTO ILLUMINATION
 SUN AZIM 91°72 DEG
 INCID ANG 79.52 DEG
 EMISS ANG 3.86 DEG
 PHASE ANG 72.51 DEG
 ALPHA -1.92 DEG

PRINCIPAL POINT
 LATITUDE 9°39 DEG
 LONGITUDE 27.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	C 05 DEG	AB 42.5 KM
A LONG	28.71 DEG	BC 34.8 KM
B LAT	-0.45 DEG	CD 42.3 KM
B LONG	28.17 DEG	DA 36.8 KM
C LAT	-0.04 DEG	TILT DISTANCE 5.2
C LONG	27.10 DEG	
D LAT	1.28 DEG	
D LONG	27.57 DEG	

CORNER COORDINATE SIDE LENGTH

A LAT	9.45 DEG	AB 18.6 KM
A LONG	28.06 DEG	BC 4.6 KM
B LAT	0.08 DEG	CD 18.6 KM
B LONG	27.83 DEG	D4 4.7 KM
C LAT	9.13 DEG	TILT DISTANCE 39.8
C LONG	27.69 DEG	
D LAT	9.71 DEG	
D LONG	27.91 DEG	

CORNER COORDINATE SIDE LENGTH

A LAT	0.45 DEG	AB 18.6 KM
A LONG	28.06 DEG	BC 4.6 KM
B LAT	0.08 DEG	CD 18.6 KM
B LONG	27.83 DEG	D4 4.7 KM
C LAT	9.13 DEG	TILT DISTANCE 39.8
C LONG	27.69 DEG	
D LAT	9.71 DEG	
D LONG	27.91 DEG	

MISSION/
FRAME NO.3051
YR+MO+DY
HR+MI+SEC

TIME

S/C POSITION
 ALT 51°54' KM
 ALT RT -0.0084 KM/SEC
 LAT 0.25 DEG
 LONG 27.94 DEG
 N.DEV. 338.91 DEG

S/C ORIENTATION
 TILT ANG 3°77 DEG
 TILT AZIM 32.53 DEG
 SWING ANG 191.50 DEG
 N.DEV. 338.91 DEG

PHOTO ILLUMINATION
 SUN AZIM 91°70 DEG
 INCID ANG 70.49 DEG
 EMISS ANG 3.88 DEG
 PHASE ANG 72.51 DEG
 ALPHA -2.05 DEG

PRINCIPAL POINT
 LATITUDE 9°34 DEG
 LONGITUDE 25.77 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	C 80 DEG	AB 42.6 KM
A LONG	28.84 DEG	BC 34.8 KM
B LAT	-0.50 DEG	CD 42.2 KM
B LONG	28.30 DEG	DA 36.8 KM
C LAT	-0.09 DEG	TILT DISTANCE 5.3
C LONG	27.23 DEG	
D LAT	1.23 DEG	
D LONG	27.70 DEG	

CORNER COORDINATE SIDE LENGTH

A LAT	0.50 DEG	AB 18.6 KM
A LONG	28.19 DEG	BC 4.6 KM
B LAT	0.03 DEG	CD 18.6 KM
B LONG	27.96 DEG	DA 4.7 KM
C LAT	0.09 DEG	TILT DISTANCE 40.1
C LONG	27.82 DEG	
D LAT	0.66 DEG	
D LONG	25.04 DEG	

CORNER COORDINATE SIDE LENGTH

A LAT	0.50 DEG	AB 18.6 KM
A LONG	28.19 DEG	BC 4.6 KM
B LAT	0.03 DEG	CD 18.6 KM
B LONG	27.96 DEG	DA 4.7 KM
C LAT	0.09 DEG	TILT DISTANCE 40.1
C LONG	27.82 DEG	
D LAT	0.66 DEG	
D LONG	25.04 DEG	

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MISSION/
FRAME NO.3052
YR,HO,DY
HR,MI,SEC
135039.01

TIME 670216
 S/C POSITION ALT 51.09 KM
 ALT RT -0.0235 KM/SEC
 LAT 0.85 DEG SWING ANG 1.39 DEG
 LONG 24.39 DEG N.DEV. 338.78 DEG
 ALPHA 3.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.89 DEG	AB .45.1 KM
A LONG .24.97 DEG	BC .40.8 KM
B LAT -0.54 DEG	CD .45.3 KM
B LONG 24.57 DEG	DA 33.9 KM
C LAT -0.07 DEG	TILT DISTANCE
C LONG 23.31 DEG	19.9
D LAT 1.28 DEG	
D LONG 23.56 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	0.72 DEG
A LONG	24.41 DEG
B LAT	0.12 DEG
B LONG	24.19 DEG
C LAT	0.17 DEG
C LONG	24.03 DEG
D LAT	0.78 DEG
D LONG	24.27 DEG

MISSION/
FRAME NO.3053
YR,HO,DY
HR,MI,SEC
135039.21

TIME 670216
 S/C POSITION ALT 51.04 KM
 ALT RT -0.0224 KM/SEC
 LAT 0.81 DEG SWING ANG 0.73 DEG
 LONG 24.51 DEG N.DEV. 338.77 DEG
 ALPHA

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.84 DEG	AB .45.1 KM
A LONG 25.10 DEG	BC .40.8 KM
B LAT -0.59 DEG	CD .45.2 KM
B LONG 24.70 DEG	DA 33.0 KM
C LAT -0.12 DEG	TILT DISTANCE
C LONG 23.44 DEG	19.9
D LAT 1.22 DEG	
D LONG 24.09 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	0.67 DEG
A LONG	24.54 DEG
B LAT	0.07 DEG
B LONG	24.32 DEG
C LAT	0.12 DEG
C LONG	24.16 DEG
D LAT	0.73 DEG
D LONG	24.40 DEG

PHOTO ILLUMINATION
 PRINCIPAL POINT
 LATITUDE 0.41 DEG
 LONGITUDE 24.36 DEGPHOTO ILLUMINATION
 PRINCIPAL POINT
 LATITUDE 0.41 DEG
 LONGITUDE 24.36 DEGPHOTO ILLUMINATION
 PRINCIPAL POINT
 LATITUDE 0.41 DEG
 LONGITUDE 24.36 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.3054
YR. MO. DY
HR. MI. SEC
135041.51TIME
670216S/C POSITION
ALT 50°.9 KM
ALT RT ~0.0212 KM/SEC
LAT 0°.76 DEG
LONG 24°.64 DEG
N.DEV. 338°.77 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0°.79 DEG AB 45.1 KM
A LONG 25°.24 DEG BC 40°.7 KM
B LAT -0°.64 DEG CD 45.2 KM
B LONG 24°.64 DEG DA 32°.9 KM
C LAT -0°.17 DEG TILT DISTANCE
C LONG 23°.58 DEG 19°.9
D LAT 1°.17 DEG
D LONG 24°.22 DEGS/C ORIENTATION
TILT ANG 14°.06 DEG
TILT AZIM 200°.76 DEG
SWING ANG 9°.15 DEG
N.DEV. 338°.77 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0°.62 DEG AB 19.6 KM
A LONG 24°.67 DEG BC 5.0 KM
B LAT 0°.02 DEG CD 19.6 KM
B LONG 24°.45 DEG DA 4.5 KM
C LAT 0°.07 DEG TILT DISTANCE
C LONG 24°.30 DEG 52°.6
D LAT 0°.68 DEG
D LONG 24°.53 DEGMISSION/
FRAME NO.3055
YR. MO. DY
HR. MI. SEC
135042.71TIME
670216
ALT RT ~0.0201 KM/SEC
LAT 0°.71 DEG
LONG 24°.77 DEG
N.DEV. 338°.76 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0°.74 DEG AB 45.1 KM
A LONG 25°.37 DEG BC 40°.7 KM
B LAT -0°.69 DEG CD 45.1 KM
B LONG 24°.97 DEG DA 32°.9 KM
C LAT -0°.22 DEG TILT DISTANCE
C LONG 23°.71 DEG 19°.9
D LAT 1°.12 DEG
D LONG 24°.35 DEGS/C ORIENTATION
TILT ANG 14°.06 DEG
TILT AZIM 200°.23 DEG
SWING ANG 359°.59 DEG
N.DEV. 338°.76 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0°.62 DEG AB 19.6 KM
A LONG 24°.67 DEG BC 5.0 KM
B LAT 0°.03 DEG CD 19.6 KM
B LONG 24°.58 DEG DA 4.5 KM
C LAT 0°.02 DEG TILT DISTANCE
C LONG 24°.43 DEG 52°.6
D LAT 0°.63 DEG
D LONG 24°.66 DEGPRINCIPAL POINT
LATITUDE 0°.36 DEG
LONGITUDE 24°.49 DEGPRINCIPAL POINT
LATITUDE 0.31 DEG
LONGITUDE 24°.62 DEGPRINCIPAL POINT
LATITUDE 0.31 DEG
LONGITUDE 24°.62 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0°.57 DEG AB 19.6 KM
A LONG 24°.80 DEG BC 5.0 KM
B LAT -0°.03 DEG CD 19.6 KM
B LONG 24°.58 DEG DA 4.5 KM
C LAT 0°.02 DEG TILT DISTANCE
C LONG 24°.43 DEG 52°.6
D LAT 0°.63 DEG
D LONG 24°.66 DEGPHOTO ILLUMINATION
SUN AZIM 91°.68 DEG
INCID ANG 72°.24 DEG
EMISS ANG 14°.48 DEG
PHASE ANG 68.08 DEG
ALPHA 3.59 DEGPHOTO ILLUMINATION
SUN AZIM 91°.67 DEG
INCID ANG 72.11 DEG
EMISS ANG 14°.48 DEG
PHASE ANG 68.08 DEG
ALPHA 3.45 DEG

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MISSION /

FRAME NO.

TIME

3056 YR, MO, DY 670216 ALT 50°.93 KM S/C ORIENTATION TILT ANG 14.06 DEG PRINCIPAL POINT SUN AZIM 91.65 DEG LATITUDE 0.26 DEG
 HR, MI, SEC 135045.91 ALT RT -0.0178 KM/SEC TILT AZIM 199.69 DEG LONGITUDE 24.75 DEG
 LAT 0.66 DEG SWING ANG 359.04 DEG EMISS ANG 14.48 DEG
 LONG 24.89 DEG N-DEV. 338.76 DEG PHASE ANG 68.08 DEG
 ALPHA 3.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0°.69 DEG	AB 4.51 KM
A LONG 25.50 DEG	BC 4.0.7 KM
B LAT -0°.74 DEG	CD 4.5.0 KM
B LONG 25.10 DEG	DA 32.9 KM
C LAT -0°.27 DEG	TILT DISTANCE 19.9
C LONG 23.84 DEG	
D LAT 1°.07 DEG	
D LONG 24.48 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0°.52 DEG	AB 19.5 KM
A LONG 24.93 DEG	BC 5.0 KM
B LAT -0°.08 DEG	CD 19.5 KM
B LONG 24.71 DEG	DA 4.5 KM
C LAT -0°.02 DEG	TILT DISTANCE 52.7
C LONG 24.56 DEG	
D LAT 0°.58 DEG	
D LONG 24.79 DEG	

MISSION /

FRAME NO.

TIME

3057 YR, MO, DY 670216 ALT 50°.86 KM S/C ORIENTATION TILT ANG 14.07 DEG PRINCIPAL POINT SUN AZIM ~ 91.64 DEG LATITUDE 0.21 DEG
 HR, MI, SEC 135046.11 ALT RT -0.0178 KM/SEC TILT AZIM 199.15 DEG LONGITUDE 24.88 DEG
 LAT 0.61 DEG SWING ANG 358.48 DEG EMISS ANG 14.49 DEG
 LONG 25.92 DEG N-DEV. 338.75 DEG PHASE ANG 68.08 DEG
 ALPHA 3.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C-24 DEG	AB 4.5.1 KM
A LONG 25.63 DEG	BC 4.0.6 KM
B LAT -0°.79 DEG	CD 4.5.9 KM
B LONG 25.23 DEG	DA 32.9 KM
C LAT -0°.32. DEG	TILT DISTANCE 19.9
C LONG 23.57 DEG	
D LAT 1°.02 DEG	
D LONG 24.61 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.47 DEG	AB 19.5 KM
A LONG 25.05 DEG	BC 5.0 KM
B LAT -0°.13 DEG	CD 19.5 KM
B LONG 24.84 DEG	DA 4.5 KM
C LAT -0°.07 DEG	TILT DISTANCE 52.7
C LONG 24.69 DEG	
D LAT 0.53 DEG	
D LONG 24.92 DEG	

PRINCIPAL POINT

LATITUDE 0.26 DEG

LONGITUDE 24.75 DEG

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MISSION/

FRAME NO.

YR. MO. DY

HR. MI. SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50.82 KM ALT RT -0.0166 KM/SEC LAT 0.56 DEG LONG 25.45 DEG	TIILT ANG 14.07 DEG TILT AZIM 198.59 DEG SWING ANG 367.90 DEG N.DEV. 338.75 DEG	SUN AZIM 91.62 DEG INCID ANG 71.71 DEG EMIS ANG 14.49 DEG PHASE ANG 68.08 DEG	LATITUDE 0.15 DEG LONGITUDE 25.02 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C.59 DEG A LONG 25.76 DEG	AB 45.1 KM BC 40.6 KM
B LAT -0.85 DEG B LONG 25.36 DEG	CD 44.8 KM DA 32.8 KM
C LAT -C.37 DEG C LONG 24.11 DEG	TIILT DISTANCE 19.9
D LAT 0.97 DEG D LONG 24.75 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.42 DEG A LONG 25.20 DEG	AB 19.5 KM BC 5.0 KM
B LAT -0.18 DEG B LONG 24.98 DEG	CD 19.5 KM DA 4.5 KM
C LAT -0.13 DEG C LONG 24.82 DEG	TILT DISTANCE 52.8
D LAT 0.47 DEG D LONG 25.06 DEG	

MISSION/

FRAME NO.

YR. MO. DY

HR. MI. SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50.78 KM ALT RT -0.0155 KM/SEC LAT 0.51 DEG LONG 25.28 DEG	TIILT ANG 14.08 DEG TILT AZIM 198.05 DEG SWING ANG 357.35 DEG N.DEV. 338.74 DEG	SUN AZIM 91.61 DEG INCID ANG 71.57 DEG EMIS ANG 14.50 DEG PHASE ANG 68.08 DEG	LATITUDE 0.11 DEG LONGITUDE 25.15 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C.54 DEG A LONG 25.89 DEG	AB 45.1 KM BC 40.6 KM
B LAT -C.90 DEG B LONG 25.49 DEG	CD 44.8 KM DA 32.8 KM
C LAT -0.42 DEG C LONG 24.24 DEG	TIILT DISTANCE 19.9
D LAT 0.92 DEG D LONG 24.88 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.37 DEG A LONG 25.32 DEG	AB 19.5 KM BC 5.0 KM
B LAT -0.23 DEG B LONG 25.10 DEG	CO 19.5 KM DA 4.5 KM
C LAT -0.18 DEG C LONG 24.95 DEG	TILT DISTANCE 52.8
D LAT 0.42 DEG D LONG 25.19 DEG	

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 50.82 KM ALT RT -0.0152 KM/SEC LAT 0.52 DEG LONG 24.88 DEG	TIILT ANG 14.08 DEG TILT AZIM 198.05 DEG SWING ANG 357.35 DEG N.DEV. 338.74 DEG	SUN AZIM 91.61 DEG INCID ANG 71.57 DEG EMIS ANG 14.50 DEG PHASE ANG 68.08 DEG	LATITUDE 0.11 DEG LONGITUDE 25.15 DEG

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MISSION/

FRAME NO.

3063
YR. MO. DY
HR. MI. SECTIME
670216
171537.91S/C POSITION
ALT 50.27 KM
ALT RT -0.0091 KM/SEC
LAT 0.20 DEG
LONG 24.10 DEG

N.DEV.

S/C ORIENTATION
TILT ANG 11.00 DEG
TILT AZIM 19.48 DEG
SWING ANG 178.43 DEG
N.DEV. 338.59 DEGPHOTO ILLUMINATION
SUN AZIM 91.75 DEG
INCID ANG 70.76 DEG
EMIS ANG 11.32 DEG
PHASE ANG 74.53 DEGPRINCIPAL POINT
LATITUDE 0.51 DEG
LONGITUDE 24.21 DEG

MISSION/

FRAME NO.

3061
YR. MO. DY
HR. MI. SECTIME
670216
171540.01S/C POSITION
ALT 50.25 KM
ALT RT -0.0080 KM/SEC
LAT 0.16 DEG
LONG 24.22 DEG

N.DEV.

S/C ORIENTATION
TILT ANG 10.99 DEG
TILT AZIM 20.44 DEG
SWING ANG 179.10 DEG
N.DEV. 338.59 DEGPHOTO ILLUMINATION
SUN AZIM 91.74 DEG
INCID ANG 70.63 DEG
EMIS ANG 11.32 DEG
PHASE ANG 74.53 DEGPRINCIPAL POINT
LATITUDE 0.46 DEG
LONGITUDE 24.34 DEG

MISSION/

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.99 DEG AB 43.1 KM
A LONG 25.09 DEG BC 32.8 KM
B LAT -0.29 DEG CD 43.3 KM
B LONG 24.49 DEG DA 38.7 KM
C LAT 0.09 DEG TILT DISTANCE 15.6
C LONG 23.48 DEG
D LAT 1.46 DEG 23.90 DEG
D LONG 23.90 DEGCORNER COORDINATE SIDE LENGTH
A LAT 0.78 DEG AB 18.8 KM
A LONG 24.40 DEG BC 4.5 KM
B LAT 0.20 DEG CD 18.8 KM
B LONG 24.17 DEG DA 4.8 KM
C LAT 0.25 DEG TILT DISTANCE 18.4
C LONG 24.04 DEG
D LAT 0.83 DEG
D LONG 24.25 DEG

MISSION/

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.73 DEG AB 18.8 KM
A LONG 24.53 DEG BC 4.5 KM
B LAT 0.15 DEG CD 18.8 KM
B LONG 24.30 DEG DA 4.8 KM
C LAT 0.21 DEG TILT DISTANCE 18.4
C LONG 24.16 DEG
D LAT 0.79 DEG
D LONG 24.36 DEGCORNER COORDINATE SIDE LENGTH
A LAT 0.78 DEG AB 18.8 KM
A LONG 24.40 DEG BC 4.5 KM
B LAT 0.20 DEG CD 18.8 KM
B LONG 24.17 DEG DA 4.8 KM
C LAT 0.25 DEG TILT DISTANCE 18.4
C LONG 24.04 DEG
D LAT 0.83 DEG
D LONG 24.25 DEG

MISSION/

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.78 DEG AB 18.8 KM
A LONG 24.40 DEG BC 4.5 KM
B LAT 0.20 DEG CD 18.8 KM
B LONG 24.17 DEG DA 4.8 KM
C LAT 0.25 DEG TILT DISTANCE 18.4
C LONG 24.04 DEG
D LAT 0.83 DEG
D LONG 24.25 DEGCORNER COORDINATE SIDE LENGTH
A LAT 0.78 DEG AB 18.8 KM
A LONG 24.40 DEG BC 4.5 KM
B LAT 0.20 DEG CD 18.8 KM
B LONG 24.17 DEG DA 4.8 KM
C LAT 0.25 DEG TILT DISTANCE 18.4
C LONG 24.04 DEG
D LAT 0.83 DEG
D LONG 24.25 DEG

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MISSION/
FRAME NO.

3062 TIME 670216
YR+MO+DY 171942.31
HR+MI+SEC

S/C POSITION ALT 50°24' KM
ALT RT -0.0069 KM/SEC
LAT -0.10 DEG
LONG 24°36' DEG

S/C ORIENTATION TILT ANG 10°99' DEG
TILT AZIM 20°87' DEG
SWING ANG 179°84' DEG
N.DEV. 338.60' DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.90 DEG AB 43.1 KM
A LONG 25.35 DEG BC 32.7 KM
B LAT -0.39 DEG CD 43.2 KM
B LONG 24°75' DEG DA 38.6 KM
C LAT -0.01 DEG TILT DISTANCE
C LONG 23°74' DEG 15.5
D LAT 1.35 DEG
D LONG 24°16' DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 91°72' DEG LATITUDE 0°41' DEG
INCID ANG 70°49' DEG LONGITUDE 24°47' DEG
EMISS ANG 11°32' DEG
PHASE ANG 74°53' DEG
ALPHA -4°38' DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.68 DEG AB 18.8 KM
A LONG 24°66' DEG BC 4.5 KM
B LAT 0°10' DEG CD 18.8 KM
B LONG 24°43' DEG DA 4.8 KM
C LAT 0°15' DEG TILT DISTANCE
C LONG 24°30' DEG 18.4'
D LAT 0°73' DEG
D LONG 24°51' DEG

MISSION/
FRAME NO.

3063 TIME 670216
YR+MO+DY 171544.41
HR+MI+SEC

S/C POSITION ALT 50°22' KM
ALT RT -0.0058 KM/SEC
LAT -0.06 DEG
LONG 24°48' DEG

S/C ORIENTATION TILT ANG 10°99' DEG
TILT AZIM 21°54' DEG
SWING ANG 180°52' DEG
N.DEV. 338.60' DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 91°71' DEG LATITUDE 0°36' DEG
INCID ANG 70°37' DEG LONGITUDE 24°59' DEG
EMISS ANG 11°32' DEG
PHASE ANG 74°53' DEG
ALPHA -4°50' DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.85 DEG AB 43.1 KM
A LONG 25.47 DEG BC 32.7 KM
B LAT -0.44 DEG CD 43.1 KM
B LONG 24°87' DEG DA 38.6 KM
C LAT -0.06 DEG TILT DISTANCE
C LONG 23°86' DEG 15.5
D LAT 1.30 DEG
D LONG 24°28' DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 91°71' DEG LATITUDE 0°36' DEG
INCID ANG 70°37' DEG LONGITUDE 24°59' DEG
EMISS ANG 11°32' DEG
PHASE ANG 74°53' DEG
ALPHA -4°50' DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0.63 DEG AB 18.8 KM
A LONG 24°78' DEG BC 4.5 KM
B LAT 0°05' DEG CD 18.8 KM
B LONG 24°56' DEG DA 4.8 KM
C LAT 0°11' DEG TILT DISTANCE
C LONG 24°42' DEG 18.4'
D LAT 0°69' DEG
D LONG 24°64' DEG

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FRAMING

TIME		S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR, MO, DY	670516	ALT 50.21 KH	TIILT ANG 11.00 DEG	SUN AZIM 91.69 DEG	LATITUDE 0.31 DEG
HR, MI, SEC	171946.71	ALT RT -0.0046 KM/SEC	TIILT AZIM 22.26 DEG	INCID ANG 70.23 DEG	LONGITUDE 24.73 DEG
		LAT 0.01 DEG	SWNG ANG 181.26 DEG	EMISS ANG 11.32 DEG	
		LONG 24.61 DEG	N.DEV. 338.60 DEG.	PHASE ANG 74.53 DEG	

HEDGING BEHAVIOR

HIGH RESOLUTION		SIDE LENGTH		CORNER COORDINATE		HIGH RESOLUTION	
COORDINATE	SIDE LENGTH	COORDINATE	SIDE LENGTH	COORDINATE	SIDE LENGTH	COORDINATE	SIDE LENGTH
A LAT	0.80 DEG	AB	43.2 KM	A LAT	0.58 DEG	AB	18.8 KM
B LONG	25.61 DEG	BC	32.7 KM	A LONG	24.92 DEG	BC	4.5 KM
C LAT	-0.50 DEG	CD	43.1 KM	B LAT	0.00 DEG	CD	18.8 KM
D LONG	25.01 DEG	DA	36.6 KM	B LONG	24.69 DEG	DA	4.8 KM
E LAT	-0.11 DEG	TILT DISTANCE		C LAT	0.05 DEG	TILT DISTANCE	
F LONG	24.00 DEG	15.5		C LONG	24.55 DEG	18.4	
G LAT	1.25 DEG			D LAT	0.63 DEG		
H LONG	24.42 DEG			D LONG	24.77 DEG		

MENTION

LINE NO.	TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT			
		YR.	MO.	DAY	HR.	MIN.	SEC	SUN AZIM	91-68 DEG	LATITUDE	0.26 DEG
1	670216	ALT	50.20	KM	TIILT ANG	11.00	DEG	INCID ANG	70.10 DEG	LONGITUDE	24.86 DEG
2	17154E.91	ALT RT	-0.0034	KM/SEC	TIILT AZIM	22.95	DEG	SWING ANG	181.97 DEG	EMISS ANG	11.32 DEG
3		LAT	-0.04	DEG	N.DEV.	338.60	:DEG	PHASE ANG	74.53 DEG		
4		LONG	24.73	DEG.							

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	CORNER	COORDINATE	SIDE LENGTH
A	LAT 0.75 DEG	AB 4.3° 2 KM	A	LAT 0.53 DEG	AB 18.8 KM
A	LONG . 25.74 DEG	BC 32.0° 7 KM	A	LONG 25.05 DEG	BC 4.5 KM
B	LAT -0.55 DEG	CD 4.3° 0 KM	B	LAT -0.05 DEG	CD 18.8 KM
B	LONG 25.14 DEG	DA 38.6 KM	B	LONG 24.82 DEG	DA 4.8 KM
C	LAT -0.16 DEG	TILT DISTANCE 15.5	C	LAT 0.00 DEG	TILT DISTANCE 18.4
C	LONG 24.13 DEG		C	LONG 24.68 DEG	
D	LAT 1.20 DEG		D	LAT 0.58 DEG	
D	LONG 24.65 DEG		D	LONG 24.90 DEG	

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POINT
0.31 DEG
24.73 DEG

120/1200000000

HIGH RESOLUTION	COORDINATE	'SIDE LENGTH
0.58 DEG	AB	18° 8 KH
24° 92. DEG	BC	4° 5 KH
0.00 DEG	CD	18° 8 KH
24° 69 DEG	DA	4° 8 KH
0.05 DEG		TILT DISTANCE
24° 55 DEG		18.4
24° 77 DEG		

PRINCIPAL POINT
LATITUDE 0°26' DEG
LONGITUDE 24°86' DEG

MIGRATION AND

E LENGTH	T DISTANCE
18.8 KM	18.4
4.5 KM	
18.8 KM	
4.8 KM	

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MISSION /

FRAME NO.
3066
TIME
070216
YR, MO, DY
HR, MI, SEC
X71551.11

S/C POSITION
XLLF. 50.20 KM
ALT RT -0.0023 KM/SEC
LAT -0.09 DEG.
LONG 24.86 DEG

S/C ORIENTATION
TILT ANG 11.00 DEG
TILT AZIM 23.65 DEG
SWING ANG 182.68 DEG
N.DEV. 338.61 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.70 DEG AB 4.3.2 KM
A LONG 25.87 DEG BC 32.7 KM
B LAT -0.60 DEG CD 43.0 KM
B LONG 25.27 DEG DA 38.6 KM
C LAT -0.21 DEG TILT DISTANCE
C LONG 24.26 DEG 15.6
D LAT 1.15 DEG
D LONG 24.68 DEG

S/C POSITION
ALT 50.19 KM
ALT RT -0.0011 KM/SEC
LAT -0.014 DEG
LONG 24.99 DEG

S/C ORIENTATION
TILT ANG 11.01 DEG
TILT AZIM 24.38 DEG
SWING ANG 183.42 DEG
N.DEV. 338.61 DEG

MISSION /
FRAME NO.
3067
TIME
070216
YR, MO, DY
HR, MI, SEC
X71553.41

S/C POSITION
XLLF. 43.3 KM
ALT RT -0.0014 KM/SEC
LAT -0.014 DEG
LONG 24.99 DEG

S/C ORIENTATION
TILT ANG 91.66 DEG
INCID ANG 69.97 DEG
EMISS ANG 11.33 DEG
PHASE ANG 74.53 DEG
ALPHA -4.90 DEG

S/C POSITION
ALT 50.19 KM
ALT RT -0.0011 KM/SEC
LAT -0.014 DEG
LONG 24.99 DEG

S/C ORIENTATION
TILT ANG 91.66 DEG
INCID ANG 69.97 DEG
EMISS ANG 11.33 DEG
PHASE ANG 74.53 DEG
ALPHA -5.03 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.65 DEG AB 43.3 KM
A LONG 26.01 DEG BC 32.7 KM
B LAT -0.65 DEG CD 42.9 KM
B LONG 25.40 DEG DA 38.6 KM
C LAT -0.26 DEG TILT DISTANCE
C LONG 24.40 DEG 15.6
D LAT 1.09 DEG
D LONG 24.81 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.48 DEG AB 18.8 KM
A LONG 25.18 DEG BC 4.5 KM
B LAT -0.10 DEG CD 18.8 KM
B LONG 24.95 DEG DA 4.8 KM
C LAT -0.05 DEG TILT DISTANCE
C LONG 24.81 DEG 18.5
D LAT 0.53 DEG
D LONG 25.03 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 0.42 DEG AB 18.8 KM
A LONG 25.31 DEG BC 4.5 KM
B LAT -0.15 DEG CD 18.8 KM
B LONG 25.09 DEG DA 4.8 KM
C LAT -0.10 DEG TILT DISTANCE
C LONG 24.95 DEG 18.6
D LAT 0.46 DEG
D LONG 25.17 DEG

PHOTO ILLUMINATION
SUN AZIM 91.66 DEG
INCID ANG 69.97 DEG
EMISS ANG 11.33 DEG
PHASE ANG 74.53 DEG
ALPHA -4.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.64 DEG
INCID ANG 69.83 DEG
EMISS ANG 11.33 DEG
PHASE ANG 74.53 DEG
ALPHA -5.03 DEG

PHOTO ILLUMINATION
SUN AZIM 91.66 DEG
INCID ANG 69.97 DEG
EMISS ANG 11.33 DEG
PHASE ANG 74.53 DEG
ALPHA -4.90 DEG

PHOTO ILLUMINATION
SUN AZIM 91.64 DEG
INCID ANG 69.83 DEG
EMISS ANG 11.33 DEG
PHASE ANG 74.53 DEG
ALPHA -5.03 DEG

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MISSION/
FRAME NO.3068
YR, MO, DY
HR, MI, SEC
204750.61TIME
670216

S/C POSITION

ALT 49.60 KM
ALT RT -0.0198 KM/SEC
LAT 0.49 DEG
LONG 21.08 DEGS/C ORIENTATION
TILT ANG 7.29 DEG
TILT AZIM 203.41 DEG
SWING ANG 2.79 DEG
N.DEV. 339.20 DEG
ALPHA 2.49 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.71 DEG AB 41.3 KM
A LONG 21.73 DEG BC 36.6 KM
B LAT -0.59 DEG CD 41.5 KM
B LONG 21.31 DEG DA 32.9 KM
C LAT -0.17 DEG TILT DISTANCE
C LONG 20.18 DEG 10.1
D LAT 1.09 DEG
D LONG 20.72 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.54 DEG AB 18.1 KM
A LONG 21.16 DEG BC 4.6 KM
B LAT -0.02 DEG CD 18.1 KM
B LONG 20.96 DEG DA 4.4 KM
C LAT 0.04 DEG TILT DISTANCE
C LONG 20.81 DEG 78.0
D LAT 0.60 DEG
D LONG 21.03 DEGMISSION/
FRAME NO.3069
YR, MO, DY
HR, MI, SEC
204759.41TIME
670216

S/C POSITION

ALT 49.45 KM
ALT RT -0.0154 KM/SEC
LAT 0.30 DEG
LONG 21.56 DEGS/C ORIENTATION
TILT ANG 7.29 DEG
TILT AZIM 199.33 DEG
SWING ANG 358.67 DEG
N.DEV. 339.19 DEG
ALPHA 1.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.51 DEG AB 41.3 KM
A LONG 22.23 DEG BC 36.5 KM
B LAT -0.78 DEG CD 41.3 KM
B LONG 21.81 DEG DA 32.7 KM
C LAT -0.36 DEG TILT DISTANCE
C LONG 20.68 DEG 10.1
D LAT 0.89 DEG
D LONG 21.22 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.35 DEG AB 18.1 KM
A LONG -21.66 DEG BC 4.6 KM
B LAT -9.21 DEG CD 18.1 KM
B LONG 21.45 DEG DA 4.4 KM
C LAT -0.16 DEG TILT DISTANCE
C LONG 21.31 DEG 78.0
D LAT 0.40 DEG
D LONG 21.53 DEGPRINCIPAL POINT
LATITUDE 0.39 DEG
LONGITUDE 20.99 DEGPHOTO ILLUMINATION
SUN AZIM 91.66 DEG
INCID ANG 72.21 DEG
EMISS ANG 7.50 DEG
PHASE ANG 69.58 DEG
ALPHA 2.49 DEGPRINCIPAL POINT
LATITUDE 0.10 DEG
LONGITUDE 21.49 DEGPHOTO ILLUMINATION
SUN AZIM 91.60 DEG
INCID ANG 71.70 DEG
EMISS ANG 7.50 DEG
PHASE ANG 69.58 DEG
ALPHA 1.98 DEG

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MISSION/
FRAME NO.

3070 TIME 670216 ALT 49.33 KM TILT ANG 7°33' DEG
 YR, MO, DY HR, MI, SEC 2048 7.71 TILT AZIM 195.22 DEG
 ALT RT -0.0110 KM/SEC SWING ANG 354.53 DEG
 LAT 0.1 DEG N.DEV. 339.18 DEG PHASE ANG 69.58 DEG
 LONG 22.05 DEG ALPHA 1.45 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C-31 DEG	AB 41.3 KM
A LONG 22.74 DEG	BC 36.4 KM
B LAT -0.58 DEG	CD 41.0 KM
B LONG 22.31 DEG	DA 32.7 KM
C LAT -0.55 DEG	TILT DISTANCE
C LONG 21.19 DEG	10.1
D LAT 0.69 DEG	
D LONG 21.73 DEG	

S/C POSITION
 ALT 49.33 KM TILT ANG 7°33' DEG
 ALT RT -0.0110 KM/SEC TILT AZIM 195.22 DEG
 LAT 0.1 DEG SWING ANG 354.53 DEG
 LONG 22.05 DEG N.DEV. 339.18 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.15 DEG	AB 18.1 KM
A LONG 22.17 DEG	BC 4.6 KM
B LAT -0.41 DEG	CD 18.0 KM
B LONG 21.96 DEG	DA 4.4 KM
C LAT -0.35 DEG	TILT DISTANCE
C LONG 21.82 DEG	78.4
D LAT 0.20 DEG	
D LONG 22.03 DEG	

MISSION/
FRAME NO.

3071 TIME 670216 ALT 49.26 KM TILT ANG 7°40' DEG
 YR, MO, DY HR, MI, SEC 204816.21 TILT AZIM 191.22 DEG
 ALT -0.0066 KM/SEC SWING ANG 350.49 DEG
 LAT -0.08 DEG N.DEV. 339.17 DEG PHASE ANG 69.58 DEG
 LONG 22.54 DEG ALPHA 0.94 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.12 DEG	AB 41.4 KM
A LONG 23.24 DEG	BC 36.3 KM
B LAT -1.18 DEG	CD 40.8 KM
B LONG 22.82 DEG	DA 32.6 KM
C LAT -0.74 DEG	TILT DISTANCE
C LONG 21.70 DEG	10.2
D LAT 0.49 DEG	
D LONG 22.23 DEG	

S/C POSITION
 ALT 49.26 KM TILT ANG 7°40' DEG
 ALT RT -0.0066 KM/SEC TILT AZIM 191.22 DEG
 LAT -0.08 DEG SWING ANG 350.49 DEG
 LONG 22.54 DEG N.DEV. 339.17 DEG PHASE ANG 69.58 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.04 DEG	AB 18.0 KM
A LONG 22.67 DEG	BC 4.6 KM
B LAT -0.60 DEG	CD 18.0 KM
B LONG 22.46 DEG	DA 4.4 KM
C LAT -0.55 DEG	TILT DISTANCE
C LONG 22.32 DEG	79.2
D LAT 0.01 DEG	
D LONG 22.53 DEG	

PHOTO ILLUMINATION
 SUN AZIM 91.54 DEG INCID ANG 71.19 DEG
 EMIS ANG 7°54' DEG PHASE ANG 69.58 DEG
 ALPHA 1.45 DEG

PHOTO ILLUMINATION
 SUN AZIM 91.47 DEG INCID ANG 70.69 DEG
 EMIS ANG 7.61 DEG PHASE ANG 69.58 DEG
 ALPHA 0.94 DEG

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MISSION/
FRAME NO.
3072 YR, MO, DY 67G217 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC DC1748.51 ALT RT 4.9*86 KM TILT ANG 22.24 DEG SUN AZIM 91.26 DEG LATITUDE -0.83 DEG
LAT -0.0243 KM/SEC TILT AZIM 21.75 DEG INCID ANG 67.08 DEG LONGITUDE 24.32 DEG
LONG -1.46 DEG SWING ANG 181.15 DEG EMISS ANG 22.02 DEG
N.DEV. 24.07 DEG PHASE ANG 76.51 DEG
ALPHA -11.03 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.19 DEG AB 50.2 KM
A LONG 25.37 DEG BC 31.9 KM
B LAT -1.65 DEG CD 49.9 KM
B LONG 24.58 DEG DA 45.4 KM
C LAT -1.28 DEG TILT DISTANCE 32.7
C LONG 23.50 DEG
D LAT 0.33 DEG
D LONG 23.97 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -0.51 DEG AB 21.2 KM
A LONG 24.54 DEG BC 4.5 KM
B LAT -1.16 DEG CD 21.2 KM
B LONG 24.28 DEG DA 5.3 KM
C LAT -1.11 DEG TILT DISTANCE 49.3
C LONG 24.14 DEG
D LAT -0.45 DEG
D LONG 24.37 DEG

MISSION/
FRAME NO.
3073 YR, MO, DY 670217 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC 034129.51 ALT RT 62.79 KM TILT ANG 52.41 DEG SUN AZIM 92.40 DEG LATITUDE 7.59 DEG
LAT -0.1247 KM/SEC TILT AZIM 21.02 DEG INCID ANG 83.35 DEG LONGITUDE 6.60 DEG
LONG 4.99 DEG SWING ANG 177.43 DEG EMISS ANG 55.19 DEG
N.DEV. 5.60 DEG PHASE ANG 101.30 DEG
ALPHA -22.13 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 15.07 DEG AB 363.0 KM
A LONG 14.50 DEG BC 46.9 KM
B LAT 5.84 DEG CD 78.1 KM
B LONG 6.70 DEG DA 235.2 KM
C LAT 6.46 DEG TILT DISTANCE 03.9
C LONG 5.28 DEG
D LAT 17.83 DEG
D LONG 6.38 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 8.90 DEG AB 72.4 KM
A LONG 7.39 DEG BC 7.7 KM
B LAT 6.73 DEG CD 73.3 KM
B LONG 6.38 DEG DA 13.1 KM
C LAT 6.84 DEG TILT DISTANCE 91.9
C LONG 6.15 DEG
D LAT 9.10 DEG
D LONG 7.00 DEG

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MISSION/

FRAME NO.

3074
YR, MO, DY
HR, MI, SEC

TIME

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PI PRINCIPAL POINT
ALT 57°51' KM	TILT ANG 9°50' DEG	SUN AZIM 92°09' DEG	LATITUDE 4°33' DEG
ALT RT -0.1033 KM/SEC	TILT AZIM 255°39' DEG	INCID ANG 81°88' DEG	LONGITUDE 5°17' DEG
LAT 4°03' DEG	SWING ANG 64°35' DEG	EMISS ANG 0°62' DEG	
LONG 5°19' DEG	N.DEV. 339°28' DEG	PHASE ANG 81°27' DEG	
		ALPHA 0°51' DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 4°52' DEG	AB 46.9 KM	CORNER COORDINATE SIDE LENGTH
A LONG 7°07' DEG	BC 39.9 KM	A LAT 4°31' DEG AB 23.7 KM
B LAT 3°C7' DEG	CD 47.2 KM	A LONG 5°38' DEG BC 5°2 KM
B LONG 6°52' DEG	DA 39.8 KM	B LAT 3°68' DEG CD 20°7 KM
C LAT 3°S3' DEG	TILT DISTANCE	B LONG 6°13' DEG DA 5°2 KM
C LONG 6°26' DEG	0.9	C LAT 3°74' DEG TILT DISTANCE
D LAT 4°S9' DEG		C LONG 5°57' DEG 6.3
D LONG 5°B4' DEG		D LAT 4°37' DEG

MISSION/

FRAME NO.

3075
YR, MO, DY
HR, MI, SEC

TIME

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PI PRINCIPAL POINT
ALT 56°48' KM	TILT ANG 9°28' DEG	SUN AZIM 92°09' DEG	LATITUDE 3°79' DEG
ALT RT -0.0982 KM/SEC	TILT AZIM 183°31' DEG	INCID ANG 81°27' DEG	LONGITUDE 5°77' DEG
LAT 3°80' DEG	SWING ANG 342°55' DEG	EMISS ANG 0°29' DEG	
LONG 6°77' DEG	N.DEV. 339°24' DEG	PHASE ANG 81°27' DEG	
		ALPHA 0°01' DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 4°28' DEG	AB 46.2 KM	CORNER COORDINATE SIDE LENGTH
A LONG 7°65' DEG	BC 39.2 KM	A LAT 4°08' DEG AB 2G.3 KM
B LAT 2°B5' DEG	CD 46.2 KM	A LONG 6°97' DEG BC 5°J KM
B LONG 7°11' DEG	DA 39.2 KM	B LAT 3°45' DEG CD 20°3 KM
C LAT 3°31' DEG	TILT DISTANCE	B LONG 5°73' DEG DA 5°1 KM
C LONG 6°50' DEG	0.2	C LAT 3°51' DEG TILT DISTANCE
D LAT 4°43' DEG		C LONG 6°57' DEG 2°9
D LONG 6°44' DEG		D LAT 4°14' DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 4°31' DEG	AB 23.7 KM	CORNER COORDINATE SIDE LENGTH
A LONG 5°38' DEG	BC 5°2 KM	A LAT 4°31' DEG AB 2G.3 KM
B LAT 3°68' DEG	CD 20°7 KM	A LONG 6°97' DEG BC 5°J KM
B LONG 6°13' DEG	DA 5°2 KM	B LAT 3°45' DEG CD 20°3 KM
C LAT 3°74' DEG	TILT DISTANCE	B LONG 5°73' DEG DA 5°1 KM
C LONG 5°57' DEG	0.3	C LAT 3°51' DEG TILT DISTANCE
D LAT 4°37' DEG		C LONG 6°57' DEG 2°9
D LONG 6°21' DEG		D LAT 4°14' DEG

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MISSION /

FRAME NO.
3075
YR, MO, DY
HR, MI, SEC
0711 5.61

TIME
670217
ALT RT -0.0932 KM/SEC.
LAT 3.58 DEG
LONG 7.33 DEG

S/C POSITION
ALT 55.53 KM
TILT ANG 3.74 DEG
TILT AZIM 132.18 DEG
SWING ANG 291.38 DEG
N.DEV. 3.39.20 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.04 DEG	AB 45.6 KM
A LONG 8.22 DEG	BC 38.5 KM
B LAT 2.64 DEG	CD 45.2 KM
B LONG 7.69 DEG	DA 38.4 KM
C LAT 3.09 DEG	TILT DISTANCE 0.8
C LONG 6.50 DEG	
D LAT 4.49 DEG	
D LONG 7.03 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	3.85 DEG
A LONG	7.55 DEG
B LAT	3.23 DEG
B LONG	7.31 DEG
C LAT	3.29 DEG
C LONG	7.16 DEG
D LAT	3.91 DEG
D LONG	7.39 DEG

MISSION /

FRAME NO.
3077
YR, MO, DY
HR, MI, SEC
071115.51

TIME
670217
ALT RT -0.0882 KM/SEC.

LAT 3.37 DEG
LONG 7.90 DEG

S/C POSITION
ALT 54.64 KM
TILT ANG 1.32 DEG
TILT AZIM 122.82 DEG
SWING ANG 281.98 DEG
N.DEV. 3.39.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 3.81 DEG	AB 45.0 KM
A LONG 8.79 DEG	BC 37.9 KM
B LAT 2.42 DEG	CD 44.4 KM
B LONG 8.27 DEG	DA 37.8 KM
C LAT 2.88 DEG	TILT DISTANCE 1.7
C LONG 7.10 DEG	
D LAT 4.24 DEG	
D LONG 7.62 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	3.62 DEG
A LONG	8.12 DEG
B LAT	3.01 DEG
B LONG	7.89 DEG
C LAT	3.07 DEG
C LONG	7.74 DEG
D LAT	3.67 DEG
D LONG	7.97 DEG

PHOTO ILLUMINATION

SUN AZIM	INCID ANG	EMIS ANG	PHASE ANG	ALPHA
92.09 DEG	80.10 DEG	1.36 DEG	81.27 DEG	-1.17 DEG

PRINCIPAL POINT

LATITUDE	LONGITUDE	SIDE LENGTH
3.57 DEG	7.35 DEG	20.0 KM

CORNER COORDINATE	SIDE LENGTH
A LAT	3.85 DEG
A LONG	7.55 DEG
B LAT	3.23 DEG
B LONG	7.31 DEG
C LAT	3.29 DEG
C LONG	7.16 DEG
D LAT	3.91 DEG
D LONG	7.39 DEG

SUN AZIM	INCID ANG	EMIS ANG	PHASE ANG	ALPHA
92.09 DEG	80.10 DEG	1.36 DEG	81.27 DEG	-1.17 DEG

LATITUDE	LONGITUDE	SIDE LENGTH
3.34 DEG	7.93 DEG	5.0 KM

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MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3078	670217 104547.441	ALT RT 0.0964 KM/SEC LAT -4.74 DEG LONG 26.53 DEG	TILT ANG 68.88 DEG TILT AZIM 180.19 DEG SWING ANG 349.13 DEG N.DEV. 348.43 DEG	SUN AZIM 85.69 DEG INCID ANG 59.84 DEG EMISS ANG 74.44 DEG PHASE ANG 78.46 DEG .ALPHA -59.65 DEG	LATITUDE -10.29 DEG LONGITUDE 26.51 DEG
MEDIUM RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT	-7.07 DEG	AB 98.6 KM	A LAT	-8.07 DEG	AB 117.6 KM
A LONG	27.73 DEG	BC 303.5 KM	A LONG	26.82 DEG	BC 52.8 KM
B LAT	-17.55 DEG	CD 145.3 KM	B LAT	-15.05 DEG	CD 310.8 KM
B LONG	31.06 DEG	DA 57.2 KM	B LONG	26.79 DEG	DA 11.0 KM
C LAT	-42.37 DEG	TILT DISTANCE	C LAT	-18.60 DEG	TILT DISTANCE
C LONG	23.53 DEG	05.9	C LONG	25.47 DEG	78.3
D LAT	-6.47 DEG		D LAT	-7.93 DEG	
D LONG	28.50 DEG		D LONG	26.48 DEG	
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT	-8.07 DEG	AB 117.6 KM	A LAT	-8.07 DEG	AB 117.6 KM
A LONG	26.82 DEG	BC 52.8 KM	A LONG	26.82 DEG	BC 52.8 KM
B LAT	-15.05 DEG	CD 310.8 KM	B LAT	-15.05 DEG	CD 310.8 KM
B LONG	26.79 DEG	DA 11.0 KM	B LONG	26.79 DEG	DA 11.0 KM
C LAT	-18.60 DEG	TILT DISTANCE	C LAT	-18.60 DEG	TILT DISTANCE
C LONG	25.47 DEG	78.3	C LONG	25.47 DEG	78.3
D LAT	-7.93 DEG		D LAT	-7.93 DEG	
D LONG	26.48 DEG		D LONG	26.48 DEG	
MEDIUM RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT	-1.39 DEG	AB 40.4 KM	A LAT	-1.56 DEG	AB 17.7 KM
A LONG	18.47 DEG	BC 32.1 KM	A LONG	17.84 DEG	BC 4.3 KM
B LAT	-2.59 DEG	CD 40.6 KM	B LAT	-2.10 DEG	CD 17.7 KM
B LONG	17.90 DEG	DA 35.8 KM	B LONG	17.61 DEG	DA 4.5 KM
C LAT	-2.19 DEG	TILT DISTANCE	C LAT	-2.04 DEG	TILT DISTANCE
C LONG	16.93 DEG	10.3	C LONG	17.48 DEG	78.7
D LAT	-0.93 DEG		D LAT	-1.50 DEG	
D LONG	17.38 DEG		D LONG	17.70 DEG	
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT	-1.39 DEG	AB 40.4 KM	A LAT	-1.56 DEG	AB 17.7 KM
A LONG	18.47 DEG	BC 32.1 KM	A LONG	17.84 DEG	BC 4.3 KM
B LAT	-2.59 DEG	CD 40.6 KM	B LAT	-2.10 DEG	CD 17.7 KM
B LONG	17.90 DEG	DA 35.8 KM	B LONG	17.61 DEG	DA 4.5 KM
C LAT	-2.19 DEG	TILT DISTANCE	C LAT	-2.04 DEG	TILT DISTANCE
C LONG	16.93 DEG	10.3	C LONG	17.48 DEG	78.7
D LAT	-0.93 DEG		D LAT	-1.50 DEG	
D LONG	17.38 DEG		D LONG	17.70 DEG	

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MISSION
FRAME NO.

3082 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670217 ALT RT 4.7.1.6 KM TILT ANG 4°56' DEG SUN AZIM 90°84' DEG LATITUDE -1°80' DEG
 HR, MI, SEC 210519.51 ALT RT 0.0324 KM/SEC TILT AZIM 38.0.13 DEG INCID ANG 66°94' DEG LONGITUDE 13°87' DEG
 LAT -1°89' DEG SWING ANG 197°24' DEG EMISS ANG 4°68' DEG
 LONG 13.80 DEG N.DEV. 339.02 DEG PHASE ANG 69°82' DEG
 ALPHA -2°93' DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1°37' DEG AB 39.2 KM
 A LONG 14°65' DEG BC 31°7' KM
 B LAT -2°57' DEG CD 38.5 KM
 B LONG 14°15' DEG DA 33.9 KM
 C LAT -2°19' DEG TILT DISTANCE E
 C LONG 13°18' DEG 6.4'
 D LAT -0°99' DEG DEG
 D LONG 13.60 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1°56' DEG AB 17.1 KM
 A LONG 14°04' DEG BC 4°2 KM
 B LAT -2°08' DEG CD 17.0 KM
 B LONG 13°84' DEG DA 4°3 KM
 C LAT -2°03' DEG TILT DISTANCE E
 C LONG 13°71' DEG 48.5'
 D LAT -1°51' DEG
 D LONG 13.91 DEG

MISSION
FRAME NO.

3083 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670217 ALT RT 4.7.44' KM TILT ANG 4°72' DEG SUN AZIM 90°75' DEG LATITUDE -1°58' DEG
 HR, MI, SEC 210527.61 ALT RT 0.0366 KM/SEC TILT AZIM 43°90' DEG INCID ANG 66°45' DEG LONGITUDE 14°35' DEG
 LAT -2°08' DEG SWING ANG 203.05 DEG EMISS ANG 4°85' DEG
 LONG 14.26 DEG N.DEV. 339.05 DEG PHASE ANG 69°82' DEG
 ALPHA -3°41' DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1°55' DEG AB 39.5 KM
 A LONG 15°13' DEG BC 31°9 KM
 B LAT -2°76' DEG CD 38.7 KM
 B LONG 14°63' DEG DA 34.1 KM
 C LAT -2°37' DEG TILT DISTANCE E
 C LONG 13°65' DEG 6.6'
 D LAT -1°17' DEG DEG
 D LONG 14°07' DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -1°74' DEG AB 17.2 KM
 A LONG 14°52' DEG BC 4°2 KM
 B LAT -2°27' DEG CD 17.1 KM
 B LONG 14°32' DEG DA 4°4 KM
 C LAT -2°22' DEG TILT DISTANCE E
 C LONG 14°19' DEG 59.3'
 D LAT -1°69' DEG
 D LONG 14°39' DEG

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MISSION/

FRAME NO.

3084

TIME

670218

YR, MO, DY

003514.21

HR, MI, SEC

0.000000

S/C POSITION

ALT 46°47'54"

ALT RT -0.04913 KM/SEC

LAT 1°46'1 DEG

LONG 2.92 DEG

S/C ORIENTATION

TILT ANG 67°39' DEG

TILT AZIM 258.42 DEG

SWING ANG 31°92' DEG

N.DEV. 305.67 DEG

PHOTO ILLUMINATION

SUN AZIM 91°64' DEG

INCID ANG 80°17' DEG

EMISS ANG 71°44' DEG

PHASE ANG 15°55' DEG

PRINCIPAL POINT

LATITUDE 0°80' DEG

LONGITUDE -1°04' DEG

MISSION/

FRAME NO.

3085

TIME

670218

YR, MO, DY

0403 4.81

HR, MI, SEC

S/C POSITION

ALT 49°07' KM

ALT RT -0.0713 KM/SEC

LAT 2°52' DEG

LONG -1°30' DEG

S/C ORIENTATION

TILT ANG 57°14' DEG

TILT AZIM 21°55' DEG

SWING ANG 178.45 DEG

N.DEV. 320.28 DEG

PHOTO ILLUMINATION

SUN AZIM 92°58' DEG

INCID ANG 77.86' DEG

EMISS ANG 59°74' DEG

PHASE ANG 99°76' DEG

PRINCIPAL POINT

LATITUDE 4°94' DEG

LONGITUDE -0.34' DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 1°27' DEG

A LONG 0.45' DEG

B LAT -0.90' DEG

B LONG -4.20' DEG

C LAT -1.49' DEG

C LONG -9.03' DEG

D LAT 1.47' DEG

D LONG 9.10' DEG

CORNER COORDINATE

SIDE LENGTH

A LAT 1°27' DEG

A LONG 0.45' DEG

B LAT -4.12' DEG

B LONG -0.56' DEG

C LAT 4.21' DEG

C LONG -0.76' DEG

D LAT 6.56' DEG

D LONG 0.11' DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 6.38' DEG

A LONG 0.48' DEG

B LAT 4.12' DEG

B LONG 76.0' KM

C LAT 4.21' DEG

C LONG 12.5' KM

D LAT 4.37' TILT DISTANCE

D LONG 0.11' DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.3086
YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	46° 94' KM	TIILT ANG 23° 60'	SUN AZIM 91° 78' DEG	LATITUDE 1° 21' DEG	
ALT RT	-0.0545 KM/SEC	TIILT AZIM 203° 00'	INCID ANG 77° 22' DEG	LONGITUDE -1° 60' DEG	
LAT	1° 83' DEG	SWING ANG 2° 34'	EMISS ANG 24° 28' DEG		
LONG	-1° 33' DEG	N.DEV.	PHASE ANG 69° 71' DEG		
			ALPHA 6° 33' DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH			HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 1° 63' DEG	AB 47° 8' KM			A LAT 1° 47' DEG	AB 20.4 KM	
A LONG -0° 91' DEG	BC 43° 7' KM			A LONG -1° 42' DEG	BC 5.1 KM	
B LAT 0° 09' DEG	CD 48° 7' KM			B LAT 0° 84' DEG	CD 20.4 KM	
B LONG -1° 26' DEG	DA 30° 0' KM			B LONG -1° 65' DEG	DA 4.3 KM	
C LAT 0° 57' DEG	TIILT DISTANCE			C LAT 0° 89' DEG	TIILT DISTANCE	
C LONG -2° 61' DEG	34.8			C LONG -1° 89' DEG	66.3	
D LAT 1° 98' DEG				D LAT 1° 52' DEG		
D LONG -1° 83' DEG				D LONG -1° 55' DEG		

MISSION/
FRAME NO.3087
YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	46° 82' KM	TIILT ANG 23° 60' DEG	SUN AZIM 91° 78' DEG	LATITUDE 1° 16' DEG	
ALT RT	-0.0533 KM/SEC	TIILT AZIM 202° 68'	INCID ANG 77° 08' DEG	LONGITUDE -1° 46' DEG	
LAT	1° 78' DEG	SWING ANG 1° 99'	EMISS ANG 24° 28' DEG		
LONG	-1° 20' DEG	N.DEV.	PHASE ANG 69° 71' DEG		
			ALPHA 6° 18' DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH			HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 1° 57' DEG	AB 47° 8' KM			A LAT 1° 42' DEG	AB 20.3 KM	
A LONG -0° 77' DEG	BC 43° 5' KM			A LONG -1° 39' DEG	BC 5.0 KM	
B LAT 0° 04' DEG	CD 48° 5' KM			B LAT 0° 79' DEG	CD 20.4 KM	
B LONG -1° 12' DEG	DA 29° 9' KM			B LONG -1° 51' DEG	DA 4.3 KM	
C LAT 0° 53' DEG	TIILT DISTANCE			C LAT 0° 84' DEG	TIILT DISTANCE	
C LONG -2° 47' DEG	34.7			C LONG -1° 87' DEG	66.3	
D LAT 1° 93' DEG				D LAT 1° 47' DEG		
D LONG -1° 69' DEG				D LONG -1° 42' DEG		



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MISSION/
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 46°.70 KM ALT RT -0.0521 KM/SEC	TILT ANG 23°.60 DEG TILT AZIM 202°.37 DEG	SUN AZIM 91°.77 DEG INCID ANG 76°.94 DEG	LATITUDE 1°.11 DEG LONGITUDE -1°.33 DEG
LAT 1°.73 DEG LONG -1°.07 DEG	SWING ANG 1°.64 DEG N.DEV. 337°.35 DEG	EMISS ANG 24°.27 DEG PHASE ANG 69°.71 DEG	
		ALPHA 6°.02 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1°.52 DEG A LONG -0.64 DEG B LAT -0.01 DEG B LONG -0.99 DEG C LAT 0.48 DEG C LONG -2.33 DEG D LAT 1.87 DEG D LONG -1.56 DEG	AB 47.7 KM BC 43.4 KM CD 48.3 KM DA 29.9 KM TILT DISTANCE 34.7	CORNER COORDINATE SIDE LENGTH A LAT 1°.37 DEG AB 20.3 KM A LONG -1.15 DEG BC 5.0 KM B LAT 0.74 DEG CD 20.3 KM B LONG -1.38 DEG DA 4.3 KM C LAT 0.80 DEG TILT DISTANCE 66.2 C LONG -1.53 DEG D LAT 1.42 DEG D LONG -1.28 DEG

MISSION/
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 46°.58 KM ALT RT -0.0510 KM/SEC	TILT ANG 23°.59 DEG TILT AZIM 202°.05 DEG	SUN AZIM 91°.76 DEG INCID ANG 76°.80 DEG	LATITUDE 1°.06 DEG LONGITUDE -1°.19 DEG
LAT 1°.68 DEG LONG -0.94 DEG ..	SWING ANG 1°.29 DEG N.DEV. 337°.34 DEG	EMISS ANG 24°.26 DEG PHASE ANG 69°.71 DEG	
		ALPHA 5°.87 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1.47 DEG A LONG -0.50 DEG B LAT -0.06 DEG B LONG -0.65 DEG C LAT 0.43 DEG C LONG -2.19 DEG D LAT 1.82 DEG D LONG -1.42 DEG	AB 47.5 KM BC 43.3 KM CD 48.1 KM DA 29.8 KM TILT DISTANCE 34.7	CORNER COORDINATE SIDE LENGTH A LAT 1.32 DEG AB 20.2 KM A LONG -1.02 DEG BC 5.0 KM B LAT 0.69 DEG CD 20.2 KM B LONG -1.24 DEG DA 4.3 KM C LAT 0.75 DEG TILT DISTANCE 66.2 C LONG -1.40 DEG D LAT 1.37 DEG D LONG -1.15 DEG

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1°.37 DEG A LONG -1.15 DEG B LAT 0.74 DEG B LONG -1.38 DEG C LAT 0.80 DEG C LONG -1.53 DEG D LAT 1.42 DEG D LONG -1.28 DEG	AB 20.3 KM BC 5.0 KM CD 20.3 KM DA 4.3 KM TILT DISTANCE 66.2	CORNER COORDINATE SIDE LENGTH A LAT 1°.37 DEG AB 20.3 KM B LAT 0.74 DEG CD 20.3 KM B LONG -1.38 DEG DA 4.3 KM C LAT 0.80 DEG TILT DISTANCE 66.2

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1°.37 DEG A LONG -1.15 DEG B LAT 0.74 DEG B LONG -1.38 DEG C LAT 0.80 DEG C LONG -1.53 DEG D LAT 1.42 DEG D LONG -1.28 DEG	AB 20.3 KM BC 5.0 KM CD 20.3 KM DA 4.3 KM TILT DISTANCE 66.2	CORNER COORDINATE SIDE LENGTH A LAT 1°.37 DEG AB 20.3 KM B LAT 0.74 DEG CD 20.3 KM B LONG -1.38 DEG DA 4.3 KM C LAT 0.80 DEG TILT DISTANCE 66.2

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MISSION/
FRAME NO.

3090 TIME 670218
YR, MO, DY 073216•53
HR, MI, SEC 073220•77

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	DEG	SUN AZIM	91•75 DEG	LATITUDE	1•01 DEG
ALT RT	KM/SEC	TILT AZIM	201•73 DEG	INCID ANG	76•67 DEG	LONGITUDE	-1•06 DEG
LAT	1•63 DEG	SWING ANG	0•94 DEG	EMISS ANG	24•26 DEG		
LONG	-0•81 DEG	N.DEV.	337•33 DEG	PHASE ANG	69•71 DEG		
				ALPHA	5•72 DEG		
MEDIUM RESOLUTION							
CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	1•42 DEG	AB	47•5 KM	A LAT	1•27 DEG	AB	20•2 KM
A LONG	-0•37 DEG	BC	43•2 KM	A LONG	-0•88 DEG	BC	5•0 KM
B LAT	-0•11 DEG	CD	48•0 KM	B LAT	0•64 DEG	CD	20•2 KM
B LONG	-0•72 DEG	DA	29•7 KM	B LONG	-1•11 DEG	DA	4•3 KM
C LAT	0•39 DEG	TILT DISTANCE		C LAT	0•70 DEG	TILT DISTANCE	
C LONG	-2•05 DEG	34•7		C LONG	-1•26 DEG	66•2	
D LAT	1•77 DEG			D LAT	1•32 DEG		
D LONG	-1•29 DEG			D LONG	-1•02 DEG		

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	DEG	SUN AZIM	91•74 DEG	LATITUDE	0•96 DEG
ALT RT	KM/SEC	TILT AZIM	201•42 DEG	INCID ANG	76•53 DEG	LONGITUDE	-0•93 DEG
LAT	1•58 DEG	SWING ANG	0•50 DEG	EMISS ANG	24•26 DEG		
LONG	-0•68 DEG	N.DEV.	337•32 DEG	PHASE ANG	69•71 DEG		
				ALPHA	5•57 DEG		
MEDIUM RESOLUTION							
CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	1•37 DEG	AB	47•5 KM	A LAT	1•22 DEG	AB	20•1 KM
A LONG	-0•24 DEG	BC	43•1 KM	A LONG	-0•75 DEG	BC	5•0 KM
B LAT	-0•16 DEG	CD	47•8 KM	B LAT	0•59 DEG	CD	20•1 KM
B LONG	-0•59 DEG	DA	29•6 KM	B LONG	-0•98 DEG	DA	4•2 KM
C LAT	0•34 DEG	TILT DISTANCE		C LAT	0•65 DEG	TILT DISTANCE	
C LONG	-1•92 DEG	34•7		C LONG	-1•13 DEG		
D LAT	1•72 DEG			D LAT	1•27 DEG		
D LONG	-1•15 DEG			D LONG	-0•88 DEG		

MISSION/
FRAME NO.

3091 TIME 670218
YR, MO, DY 073216•53
HR, MI, SEC 073220•77

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	DEG	SUN AZIM	91•74 DEG	LATITUDE	0•96 DEG
ALT RT	KM/SEC	TILT AZIM	201•42 DEG	INCID ANG	76•53 DEG	LONGITUDE	-0•93 DEG
LAT	1•58 DEG	SWING ANG	0•50 DEG	EMISS ANG	24•26 DEG		
LONG	-0•68 DEG	N.DEV.	337•32 DEG	PHASE ANG	69•71 DEG		
				ALPHA	5•57 DEG		
MEDIUM RESOLUTION							
CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	1•37 DEG	AB	47•5 KM	A LAT	1•22 DEG	AB	20•1 KM
A LONG	-0•24 DEG	BC	43•1 KM	A LONG	-0•75 DEG	BC	5•0 KM
B LAT	-0•16 DEG	CD	47•8 KM	B LAT	0•59 DEG	CD	20•1 KM
B LONG	-0•59 DEG	DA	29•6 KM	B LONG	-0•98 DEG	DA	4•2 KM
C LAT	0•34 DEG	TILT DISTANCE		C LAT	0•65 DEG	TILT DISTANCE	
C LONG	-1•92 DEG	34•7		C LONG	-1•13 DEG		
D LAT	1•72 DEG			D LAT	1•27 DEG		
D LONG	-1•15 DEG			D LONG	-0•88 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

3092 YR. MO. DY 670218 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 HR. MI. SEC 073222.99 ALT TILT ANG 23.59 DEG SUN AZIM 91.74 DEG LATITUDE 0.91 DEG
 ALT RT -0.0475 KM/SEC TILT AZIM 201.11 DEG INCID ANG 76.40 DEG LONGITUDE -0.80 DEG
 LAT 1.53 DEG SWING ANG 0.25 DEG EMISS ANG 24.26 DEG
 LONG -0.56 DEG N.DEV. 337.31 DEG PHASE ANG 69.71 DEG
 - - - - - ALPHA - 5.42 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.32 DEG	AB 47.5 KM
A LONG -0.11 DEG	BC 43.0 KM
B LAT -0.20 DEG	CD 47.6 KM
B LONG -0.46 DEG	DA 29.5 KM
C LAT 0.30 DEG	TILT DISTANCE 34.7
C LONG -1.78 DEG	
D LAT 1.67 DEG	CLONG -1.00 DEG 66.1
D LONG -1.02 DEG	DLAT 1.22 DEG
	DLONG -0.75 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	1.17 DEG AB 20.1 KM
A LONG	-0.62 DEG BC 5.0 KM
B LAT	0.54 DEG CD 20.1 KM
B LONG	-0.85 DEG DA 4.2 KM
C LAT	0.60 DEG TILT DISTANCE
C LONG	-1.00 DEG
D LAT	1.22 DEG
D LONG	-0.75 DEG

MISSION/
FRAME NO.

3093 YR. MO. DY 670218 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 HR. MI. SEC 073225.19 ALT TILT ANG 23.59 DEG SUN AZIM 91.73 DEG LATITUDE 0.86 DEG
 ALT RT -0.0464 KM/SEC TILT AZIM 200.81 DEG INCID ANG 76.27 DEG LONGITUDE -0.67 DEG
 LAT 1.48 DEG SWING ANG 359.92 DEG EMISS ANG 24.25 DEG
 LONG -0.43 DEG N.DEV. 337.29 DEG PHASE ANG 69.71 DEG
 - - - - - ALPHA 5.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.27 DEG	AB 47.4 KM
A LONG 0.02 DEG	BC 42.9 KM
B LAT -0.25 DEG	CD 47.5 KM
B LONG -0.33 DEG	DA 29.5 KM
C LAT 0.25 DEG	TILT DISTANCE .34.7
C LONG -1.65 DEG	
D LAT 1.62 DEG	CLONG 1.17 DEG 66.1
D LONG -0.89 DEG	DLAT -0.62 DEG
	DLONG -0.62 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT.	1.12 DEG AB 20.0 KM
A LONG	-0.49 DEG BC 5.0 KM
B LAT	0.50 DEG CD 20.0 KM
B LONG	-0.72 DEG DA 4.2 KM
C LAT	-0.56 DEG TILT DISTANCE
C LONG	-0.87 DEG
D LAT	1.17 DEG
D LONG	-0.62 DEG

PHOTO ILLUMINATION PRINCIPAL POINT

SUN AZIM 91.74 DEG

INCID ANG 76.40 DEG

EMISS ANG 24.26 DEG

PHASE ANG 69.71 DEG

ALPHA - 5.42 DEG

PHOTO ILLUMINATION PRINCIPAL POINT

SUN AZIM 91.73 DEG

INCID ANG 76.27 DEG

EMISS ANG 24.25 DEG

PHASE ANG 69.71 DEG

ALPHA 5.27 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
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MISSION/
FRAME NO.

3094 TIME 670218 S/C POSITION ALT 45.42 KM TILT ANG 10.16 DEG PRINCIPAL POINT SUN AZIM 91.76 DEG LATITUDE 0.92 DEG
YR. MO. DY HR. MI. SEC 110110.30 ALT RT -0.0398 KM/SEC TILT AZIM 204.01 DEG LONGITUDE -1.63 DEG
LAT 1.16 DEG SWING ANG 2.98 DEG EMISS. ANG 10.42 DEG
LONG -1.52 DEG N.DEV. 338.62 DEG PHASE ANG 71.76 DEG
N.DEV. ALPHA 3.49 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.29 DEG	AB 38.5 KM
A LONG -0.96 DEG	BC 34.5 KM
B LAT 0.08 DEG	CD 38.8 KM
B LONG -1.34 DEG	DA 29.7 KM
C LAT 0.48 DEG	TILT DISTANCE 14.2
C LONG -2.41 DEG	
D LAT 1.64 DEG	
D LONG -1.87 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.15 DEG	AB 16.9 KM
A LONG -1.47 DEG	BC 4.3 KM
B LAT 0.63 DEG	CD 16.9 KM
B LONG -1.67 DEG	DA 4.0 KM
C LAT 0.58 DEG	TILT DISTANCE 09.2
C LONG -1.80 DEG	
D LAT 1.19 DEG	
D LONG -1.60 DEG	

MISSION/
FRAME NO.

3095 TIME 670218 S/C POSITION ALT 45.34 KM TILT ANG 10.15 DEG PRINCIPAL POINT SUN AZIM 91.75 DEG LATITUDE 0.87 DEG
YR. MO. DY HR. MI. SEC 110112.32 ALT RT -0.0387 KM/SEC TILT AZIM 203.31 DEG LONGITUDE -1.51 DEG
LAT 1.12 DEG SWING ANG 2.28 DEG EMISS. ANG 10.42 DEG
LONG -1.41 DEG N.DEV. 338.62 DEG PHASE ANG 71.76 DEG
N.DEV. ALPHA 3.37 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.24 DEG	AB 38.5 KM
A LONG -0.84 DEG	BC 34.5 KM
B LAT 0.04 DEG	CD 38.7 KM
B LONG -1.22 DEG	DA 29.7 KM
C LAT 0.44 DEG	TILT DISTANCE 14.2
C LONG -2.29 DEG	
D LAT 1.60 DEG	
D LONG -1.75 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.10 DEG	AB 16.9 KM
A LONG -1.35 DEG	BC 4.3 KM
B LAT 0.58 DEG	CD 16.9 KM
B LONG -1.55 DEG	DA 4.0 KM
C LAT 0.63 DEG	TILT DISTANCE 09.2
C LONG -1.68 DEG	
D LAT 1.15 DEG	
Q LONG -1.48 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION

TIME	S/C POSITION		S/C ORIENTATION		PHOTO. ILLUMINATION		PRINCIPAL POINT	
	ALT	KM	TILT ANG	DEG	SUN AZIM	DEG	LATITUDE	DEG
670218	45°26'		10°15'		91°74'		0°53'	
110114.34	ALT RT -0.0377	KM/SEC	TIILT AZIM 202.62.	DEG	INCID ANG 75.23	DEG		
	LAT 1°08'	DEG	SWING ANG 1°57'	DEG	EMISS ANG 10°41'	DEG	-1°39	DEG
	LONG -1°29'	DEG	N.DEV. 338.61	DEG	PHASE ANG 71.76	DEG		

MEDIUM RESOLUTION				HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	
A LAT	1.20 DEG	AB 38.4 KM	A LAT	1.06 DEG	AB 16.8 KM		
A LONG	-0.72 DEG	BC 34.4 KM	A LONG	-1.24 DEG	BC 4.3 KM		
B LAT	-0.01 DEG	CD 38.6 KM	B LAT	0.54 DEG	CD 16.8 KM		
B LONG	-0.11 DEG	DA 29.6 KM	B LONG	-1.43 DEG	DA 4.0 KM		
C LAT	0.39 DEG	TILT DISTANCE	C LAT	3.59 DEG	TILT DISTANCE		
C LONG	-2.17 DEG	14.2	C LONG	-1.56 DEG	09.0		
D LAT	1.55 DEG		D LAT	1.10 DEG			
D LONG	-1.63 DEG		D LONG	-1.36 DEG			

MISSION /
FRAME NO.

TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
	ALT	KM	TILT ANG	DEG	SUN AZIM	DEG	LATITUDE	DEG
567021E 11/10/16..37	45.18	KM	10.14	DEG	91.73	DEG	0.78	DEG
	ALT RT	-0.0366 KM/SEC	TILT AZIM	201.93	DEG	INCID' ANG	75.11	DEG
	LAT	1.03 DEG	SWING ANG	0.86	DEG	EMISS ANG	10.41	DEG
	LONG	-1.17 DEG	N.DEV.	338.61	DEG	PHASE ANG	71.76	DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	1.15 DEG	AB 38.4 KM
A LONG	-0.60 DEG	BC 34.3 KM
B LAT	-0.05 DEG	CD 38.5 KM
B LONG	-0.59 DEG	DA 29.6 KM
C LAT	0.35 DEG	-TILT DISTANCE
C LONG	-2.04 DEG	.14.2
D LAT	1.50 DEG	
D LONG	1.51 DEG	

HIGH RESOLUTION					
CORNER	COORDINATE	SINE	COSINE	AB	BC
A LAT	1.01	DEG			
A LONG	-1-12	DEG			
B LAT	0.49	DEG			
B LONG	-1-31	DEG			
C LAT	0.54	DEG			
C LONG	-1-44	DEG			
D LAT	1.06	DEG			
D LONG	1-24	DEG			

PHOTO ILLUMINATION	PRINCIPAL POINT
SUN AZIM	LATITUDE
ENCLD ANG	LONGITUDE
EMISS ANG	0°41 DEG
PHASE ANG	71°76 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

3098 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 YR, MO, DY ALT 45.11 KM TILT ANG. 10.14 DEG SUN AZIM 91.72 DEG LATITUDE 0.74 DEG
 HR, MI, SEC ALT RT -0.5356 KM/SEC TILT AZIM 201.23 DEG INCID ANG 74.99 DEG LONGITUDE -1.15 DEG
 LAT 3.99 DEG SWING ANG 0.15 DEG EMISS ANG 10.41 DEG
 LONG -1.06 DEG N.DEV. 338.60 DEG PHASE ANG 71.76 DEG
 ALPHA 2.99 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.11 DEG	AB 38.4 KM
A LONG -0.49 DEG	BC 34.3 KM
B LAT -0.10 DEG	CD 38.4 KM
B LONG -0.87 DEG	DA 29.5 KM
C LAT 0.31 DEG	TILT DISTANCE 14.2
C LONG -1.92 DEG	
D LAT 1.46 DEG	
D LONG -1.39 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	3.96 DEG
A LONG	-1.00 DEG
B LAT	0.45 DEG
B LONG	-1.19 DEG
C LAT	0.50 DEG
C LONG	-1.32 DEG
D LAT	1.01 DEG
D LONG	-1.12 DEG

MISSION/

FRAME NO.

3099 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 YR, MO, DY ALT 45.04 KM TILT ANG 10.14 DEG SUN AZIM 91.71 DEG LATITUDE 0.69 DEG
 HR, MI, SEC ALT RT -0.0345 KM/SEC TILT AZIM 200.53 DEG INCID ANG 74.87 DEG LONGITUDE -1.03 DEG
 LAT 0.94 DEG SWING ANG 359.44 DEG EMISS ANG 10.41 DEG
 LONG -0.94 DEG N.DEV. 338.60 DEG PHASE ANG 71.76 DEG
 ALPHA 2.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.06 DEG	AB 38.3 KM
A LONG -0.37 DEG	BC 34.2 KM
B LAT 0.14 DEG	CD 38.3 KM
B LONG -0.75 DEG	DA 29.5 KM
C LAT 0.26 DEG	TILT DISTANCE 14.2
C LONG -1.80 DEG	
D LAT 1.41 DEG	
D LONG -1.27 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	0.92 DEG
A LONG	-0.88 DEG
B LAT	0.40 DEG
B LONG	-1.07 DEG
C LAT	0.45 DEG
C LONG	-1.20 DEG
D LAT	0.96 DEG
D LONG	-1.00 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.71 DEG LATITUDE 0.69 DEG
 INCID ANG 74.87 DEG LONGITUDE -1.03 DEG
 EMISS ANG 10.41 DEG
 PHASE ANG 71.76 DEG
 ALPHA 2.87 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.71 DEG LATITUDE 0.69 DEG
 INCID ANG 74.87 DEG LONGITUDE -1.03 DEG
 EMISS ANG 10.41 DEG
 PHASE ANG 71.76 DEG
 ALPHA 2.87 DEG

LUNA B CRITTERS PHOTOCOGRAMS SHEET ONE DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	1.-C1	DEG
A LONG	-0.25	DEG
B LAT	-C1.19	DEG
B LONG	-0.43	DEG
C LAT	0.-22	DEG
C LONG	-1.68	DEG
D LAT	1.-35	DEG
D LONG	-1.15	DEG

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	0.87 DEG	AB 16.7 KH
A LONG	-0.76 DEG	BC 4.3 KM
B LAT	0.35 DEG	CD 16.7 KH
B LONG	-0.95 DEG	DA 4.0 KM
C LAT	0.41 DEG	TILT DISTANCE
C LONG	-1.08 DEG	09.0
D LAT	-2.92 DEG	
D LONG	-0.88 DEG	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIN	LATITUDE
10.14 DEG	91.70 DEG	3.55 DEG
TILT AZIM	INCID ANG	LONGITUDE
199.83 DEG	74.75 DEG	-0.91 DEG
SWING ANG	EMISS ANG	
358.73 DEG	12.41 DEG	
N.DEV.	PHASE ANG	
338.59 DEG	71.76 DEG	

POSITION	SIDE	LENGTH	ANGLE
	AB	16.7 KM	90°
	BC	4.3 KM	90°
	CD	16.7 KM	90°
	DA	4.0 KM	90°
	TILT DISTANCE		
		09.0	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 10.16 DEG	SUN AZIM 91.59 DEG	LATITUDE 0.51 DEG
TILT AZIM 199.13 DEG	INCID ANG 74.53 DEG	LONGITUDE -0.79 DEG
SWING ANG 358.01 DEG	EMISS ANG 10.41 DEG	
N.DEV.	338.59 DEG	PHASE ANG 71.76 DEG
		ALPHA 2.62 DEG

PHOT
SUN
INCI
EMIS
PHAS
ALPH

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	C-57 DEG	AB .3B-.3 KN
A LONG	-9-13 DEG	BC .34-.1 KH
B LAT	-0-24 DEG	CD .3B-.1 KW
B LONG	-0-51 DEG	DA .29-.4 KH
C LAT	C-17 DEG	TILT DISTANCE
C LONG	-1-95 DEG	14-.2
D LAT	-1-21 DEG	
D LONG	-0-03 DEG	

HIGH RESOLUTION		SIDE LENGTH	
CORNER	COORDINATE		
A LAT	0.82 DEG	AB	16.7 KM
A LONG	-0.64 DEG	BC	4.3 KM
B LAT	0.31 DEG	CD	16.7 KM
B LONG	-0.83 DEG	DA	4.6 KM
C LAT	0.36 DEG	TILT DISTANCE	
C LONG	-0.96 DEG	39.1	
D LAT	0.87 DEG		
D LONG	-0.76 DEG		

ISSION/
NAME NC.
101

PRINCIPAL POINT
LATITUDE 0° 51' DEG
LONGITUDE -0° 79' DEG

EGG

LUNAR CRATER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/71

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COORDINATE	RESOLUTION	LENGTH	SIDE	ANGLE
A LAT	.5°x.9 DEG	AB	77.9 KM	
A LONG	-7.61 DEG	BC	36.7 KM	
B LAT	3°.78 DEG	CD	114.9 KM	
B LONG	-8.74 DEG	DA	90.4 KM	TILT DISTANCE
C LAT	4°.15 DEG			70.1'
C LONG	-9.90 DEG			
D LAT	7°.54 DEG			
D LONG	-9.95 DEG			

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	DEG
A LAT	5.42	AB
A LONG	-8.80	BC
B LAT	4.35	CD
B LONG	-9.09	DA
C LAT	4.41	TILT DISTANCE
C LONG	-9.27	34.4
D LAT	5.55	DEG
D LONG	-9.03	

S
TIME: 670212 ALT: 45-89 KM
YR, MO, DY 1756 0.61 RT -0.0473 KM/SEC
FR, MI, SEC LAT 1-41 DEG
 LONG -5-99 DEG

PHOTO ILLUMINATION	PRINCIPAL POINT
SUN AZIM	91.73 DEG
INCID ANG	75.54 DEG
EMISS ANG	19.50 DEG
PHASE ANG	69.73 DEG
ALPHA	6.05 DEG
LATITUDE	0.93 DEG
LONGITUDE	-5.21 DEG

MEDIUM RESOLUTION		SIDE LENGTH	ANGLE
CORNER	COORDINATE		
A LAT	1 -32	DEG	AR 42.9 KM
A LONG	-5.54	DEG	.BC 29.4 KM
B LAT	-0.25	DEG	CD 43.8 KM
B LONG	-5.90	DEG	DA 29.4 KM
C LAT	0.42	DEG	TILT DISTANCE
C LONG	-7.12	DEG	27.3.
D LAT	1.68	DEG	
D LONG	-6.44	DEG	

HIGH RESOLUTION		SIDE LENGTH	
CORNER	COORDINATE		
A LAT	1.18 DEG	AB	18.6 KM
A LONG	-6.04 DEG	BC	4.7 KM
B LAT	3.60 DEG	CD	18.6 KM
B LONG	-6.26 DEG	DA	4.1 KM
C LAT	0.66 DEG		TILT DISTANCE
C LONG	-6.40 DEG		09.6
D LAT	1.23 DEG		
D LONG	-6.17 DEG		

LUNAR CRATER PHOTOGRAPHIC SUPPORTING DATA.

FULL TEST ORDERED BY MISSION AND FRAME NUMBER

MISSION /

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
0.0 DY	676C18	ALT 45.50 KM ALT PT -0.1429 KM/SEC	TIILT ANG 18.95 DEG. TIILT AZIH 253.95 DEG	91.70 DEG INCID ANG 76.03 DEG	Q-75 DEG
1.1 SEC	1758 9.11	LAT 1° 22' 06" LONG -5.51 DEG	SWING ANG 2.04 DEG N.DEV. -337.54 DEG	EMISS ANG 19.47 DEG PHASE ANG 69.73 DEG	-5.71 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
1 LAT	1-13 DEG	AB 42.7
1 LONG	-5-04 DEG	BC 39.0
3 LAT	-0-23 DEG	CD 43.2
3 LONG	-5-40 DEG	DA 29.1
5 LAT	C-22 DEG	TILT DIST.
5 LONG	-6-50 DEG	27.3
7 LAT	1-48 DEG	
7 LONG	-5-53 DEG	

HIGH RESOLUTION		SIDES
CORNER	COORDINATE	
A LAT	0.99 DEG	AB
A LONG	-5.54 DEG	BC
B LAT	0.42 DEG	CD
B LONG	-5.76 DEG	DA
C LAT	3.47 DEG	TILT
C LONG	-5.90 DEG	
D LAT	1.03 DEG	
D LONG	-5.67 DEG	

MISSION /
FRAME NO.
3105

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	45.1° KH	TILT ANG 18.94 DEG	SUN AZIM 91.66 DEG
ALT RT	-0.0385 KH/SEC	TILT AZIM 201.74 DEG	INCID ANG 75.52 DEG
LAT	1.03 DEG	SWING ANG 0.43 DEG	EMISS ANG 19.45 DEG
LONG	-5.02 DEG	N.DEV. 337.51 DEG	PHASE ANG 69.73 DEG
			ALPHA 4.95 DEG

MEDIUM RESOLUTION			HIGH RESOLUTION		
CORNER	COORDINATE	SIDE LENGTH	CORNER	COORDINATE	SIDE LENGTH
A LAT	C-54 DEG	AB 42.5 KM	A LAT	0.79 DEG	AB 18.3 KM
A LONG	-4.54 DEG	BC 38.7 KM	A LONG	-5.04 DEG	BC 4.6 KM
B LAT	0.52 DEG	CD 42.7 KM	B LAT	0.23 DEG	CD 18.3 KM
B LONG	-4.50 DEG	DA 28.9 KM	B LONG	-5.25 DEG	DA 4.1 KM
C LAT	C-04 DEG	TILT DISTANCE	C LAT	0.28 DEG	TILT DISTANCE
C LONG	-5.09 DEG	27.3	C LONG	-5.40 DEG	
D LAT	1.28 DEG		D LAT	3.84 DEG	
D LONG	-5.43 DEG		D LONG	-5.17 DEG	

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MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
ALT 44.85 KM ALT RT -0.0341 KM/SEC	TIILT ANG 18.94 DEG TIILT AZIM 230.22 DEG	SUN AZIM 91.62 DEG INCID ANG 75.01 DEG
LAT 0.84 DEG LONG -4.53 DEG	SWING ANG 358.82 DEG N.DEV. 337.48 DEG	EMISS ANG 19.45 DEG PHASE ANG 69.73 DEG
		ALPHA 4.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT C+74 DEG	AB 4.2.5 KM
A LONG -4.04 DEG	BC 38.4 KM
B LAT -0.51 DEG	CD 4.2.3 KM
B LONG -4.40 DEG	DA 28.7 KM
C LAT -0.14 DEG	TIILT DISTANCE
C LONG -5.58 DEG	27.3
D LAT 1.09 DEG	
D LONG -4.52 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 0.65 DEG	AB 1.8.2 KM
A LONG -4.54 DEG	BC 4.6 KM
B LAT 0.54 DEG	CD 18.2 KM
B LONG -4.75 DEG	DA 4.0 KM
C LAT 0.10 DEG	TIILT DISTANCE
C LONG -4.89 DEG	09.1
D LAT 0.65 DEG	
D LONG -4.67 DEG	

MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
ALT 43.90 KM ALT RT -0.0102 KM/SEC	TIILT ANG 5.18 DEG TIILT AZIM 198.17 DEG	SUN AZIM 91.42 DEG INCID ANG 72.36 DEG
LAT -0.24 DEG LONG -5.56 DEG	SWING ANG 356.58 DEG N.DEV. 338.33 DEG	EMISS ANG 5.31 DEG PHASE ANG 70.90 DEG
		ALPHA 1.38 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -5.01 DEG	AB 36.3 KM
A LONG -4.53 DEG	BC 31.7 KM
B LAT -1.14 DEG	CD 36.2 KM
B LONG -5.34 DEG	DA 29.4 KM
C LAT -0.75 DEG	TIILT DISTANCE
C LONG -6.31 DEG	7.1
D LAT 0.34 DEG	
D LONG -5.83 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -0.15 DEG	AB 15.9 KM
A LONG -5.44 DEG	BC 4.1 KM
B LAT -0.64 DEG	CD 15.9 KM
B LONG -5.63 DEG	DA 3.9 KM
C LAT -0.59 DEG	TIILT DISTANCE
C LONG -5.76 DEG	5.2
D LAT -0.10 DEG	
D LONG -5.56 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT 0.65 DEG	AB 1.8.2 KM
A LONG -4.54 DEG	BC 4.6 KM
B LAT 0.54 DEG	CD 18.2 KM
B LONG -4.75 DEG	DA 4.0 KM
C LAT 0.10 DEG	TIILT DISTANCE
C LONG -4.89 DEG	09.1
D LAT 0.65 DEG	
D LONG -4.67 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT 0.65 DEG	AB 1.8.2 KM
A LONG -4.54 DEG	BC 4.6 KM
B LAT 0.54 DEG	CD 18.2 KM
B LONG -4.75 DEG	DA 4.0 KM
C LAT 0.10 DEG	TIILT DISTANCE
C LONG -4.89 DEG	09.1
D LAT 0.65 DEG	
D LONG -4.67 DEG	

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MISSION/

FRAME NO.

3108

YR. MO. DY
HR. MI. SECTIME
670219
042753.60

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	51.01 KM	TILT ANG 0.77 DEG	SUN AZIM 89.30 DEG	LATITUDE -4.38 DEG
ALT RT	0.0857 KM/SEC	TILT AZIM 93.70 DEG	INCID ANG 61.67 DEG	LONGITUDE 3.28 DEG
LAT	-4.38 DEG	SWING ANG 252.58 DEG	EMISS ANG 0.79 DEG	
LONG	3.25 DEG	N.DEV. 338.89 DEG	PHASE ANG 62.46 DEG	
		ALPHA -0.79 DEG		

MISSION/

FRAME NO.

3109

YR. MO. DY
HR. MI. SECTIME
670215
0426 2.52

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	51.80 KM	TILT ANG 1.30 DEG	SUN AZIM 89.15 DEG	LATITUDE -4.58 DEG
ALT RT	0.0902 KM/SEC	TILT AZIM 100.74 DEG	INCID ANG 61.15 DEG	LONGITUDE 3.80 DEG
LAT	-4.57 DEG	SWING ANG 259.47 DEG	EMISS ANG 1.34 DEG	
LONG	3.76 DEG	N.DEV. 338.93 DEG	PHASE ANG 62.46 DEG	
		ALPHA -1.31 DEG		

MISSION/

FRAME NO.

3109

YR. MO. DY
HR. MI. SECTIME
670215
0426 2.52

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	51.80 KM	TILT ANG 1.30 DEG	SUN AZIM 89.15 DEG	LATITUDE -4.58 DEG
ALT RT	0.0902 KM/SEC	TILT AZIM 100.74 DEG	INCID ANG 61.15 DEG	LONGITUDE 3.80 DEG
LAT	-4.57 DEG	SWING ANG 259.47 DEG	EMISS ANG 1.34 DEG	
LONG	3.76 DEG	N.DEV. 338.93 DEG	PHASE ANG 62.46 DEG	
		ALPHA -1.31 DEG		

MISSION/

FRAME NO.

3109

YR. MO. DY
HR. MI. SECTIME
670215
0426 2.52

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	51.80 KM	TILT ANG 1.30 DEG	SUN AZIM 89.15 DEG	LATITUDE -4.58 DEG
ALT RT	0.0902 KM/SEC	TILT AZIM 100.74 DEG	INCID ANG 61.15 DEG	LONGITUDE 3.80 DEG
LAT	-4.57 DEG	SWING ANG 259.47 DEG	EMISS ANG 1.34 DEG	
LONG	3.76 DEG	N.DEV. 338.93 DEG	PHASE ANG 62.46 DEG	
		ALPHA -1.31 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

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MISSION/
FRAME NO.

3110
YR, MO, DY
HR, MI, SEC

TIME
670219
042620.82

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 52.64 KM ALT RT 0.0948 KM/SEC	TIILT ANG 1.85. DEG TIILT AZIM 103.69 DEG SWING ANG 262.66 DEG N.DEV. 336.98 DEG	SUN AZIM 88.99 DEG INCID ANG 60.62 DEG EMIS ANG 1.91 DEG PHASE ANG 62.46 DEG	LATITUDE -4.79 DEG LONGITUDE 4.34 DEG
LAT -4.77 DEG. LAT 4.28 DEG			
LONG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT -4.33 DEG A LONG 5.17 DEG B LAT -5.67 DEG B LONG 4.66 DEG C LAT -5.22 DEG C LONG 3.54 DEG D LAT -3.91 DEG D LONG 4.04 DEG	AB 43.6 KM BC 36.4 KM CD 42.5 KM DA 36.6 KM TIILT DISTANCE 2.4	A LAT -4.52 DEG A LONG -4.52 DEG B LAT -5.10 DEG B LONG 4.30 DEG C LAT -5.04 DEG C LONG 4.15 DEG D LAT -4.46 DEG D LONG 4.38 DEG	CORNER COORDINATE SIDE LENGTH A LAT AB 19.0 KM B LAT BC 4.8 KM C LAT CD 18.9 KM D LAT DA 4.8 KM TIILT DISTANCE 19.6
A LAT -4.52 DEG A LONG -4.52 DEG B LAT -5.10 DEG B LONG 4.30 DEG C LAT -5.04 DEG C LONG 4.15 DEG D LAT -4.46 DEG D LONG 4.38 DEG	CORNER COORDINATE SIDE LENGTH A LAT AB 19.0 KM B LAT BC 4.8 KM C LAT CD 18.9 KM D LAT DA 4.8 KM TIILT DISTANCE 19.6		

MISSION/
FRAME NO.

3111
YR, MO, DY
HR, MI, SEC

TIME
670219
042620.82

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 53.53 KM ALT RT 0.0995 KM/SEC	TIILT ANG 2.41 DEG TIILT AZIM 105.28 DEG SWING ANG 264.30 DEG N.DEV. 339.03 DEG	SUN AZIM 88.82 DEG INCID ANG 60.08 DEG EMIS ANG 2.48 DEG PHASE ANG 62.46 DEG	LATITUDE -4.99 DEG LONGITUDE 4.88 DEG
LAT -4.97 DEG LONG 4.81 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT -4.52 DEG A LONG 5.74 DEG B LAT -5.89 DEG B LONG 5.21 DEG C LAT -5.43 DEG C LONG 4.07 DEG D LAT -4.10 DEG D LONG 4.58 DEG	AB 44.5 KM BC 37.1 KM CD 43.2 KM DA 37.2 KM TIILT DISTANCE 3.2	A LAT -4.72 DEG A LONG 5.07 DEG B LAT -5.31 DEG B LONG 4.84 DEG C LAT -5.25 DEG C LONG 4.69 DEG D LAT -4.66 DEG D LONG 4.92 DEG	CORNER COORDINATE SIDE LENGTH A LAT AB 19.3 KM B LAT BC 4.8 KM C LAT CD 19.2 KM D LAT DA 4.9 KM TIILT DISTANCE 25.6
A LAT -4.72 DEG A LONG 5.07 DEG B LAT -5.31 DEG B LONG 4.84 DEG C LAT -5.25 DEG C LONG 4.69 DEG D LAT -4.66 DEG D LONG 4.92 DEG	CORNER COORDINATE SIDE LENGTH A LAT AB 19.3 KM B LAT BC 4.8 KM C LAT CD 19.2 KM D LAT DA 4.9 KM TIILT DISTANCE 25.6		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

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MISSION/ FRAME NO.	TIME YR, MO, DY HR, MIN, SEC	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
311.2	670219 075244.51	ALT RT 0.0026 KM/SEC LAT -0.87 DEG LONG -7.82 DEG	TILT ANG 201.70 DEG SWING ANG 0.90 DEG N.DEV. 334.59 DEG	SUN AZIM 90.93 DEG INCID ANG 71.41 DEG EMISS ANG 36.39 DEG PHASE ANG 62.86 DEG ALPHA 3.86 DEG	LATITUDE -1.83 DEG LONGITUDE -8.20 DEG
MEDIUM RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	-1.35 DEG	AB 62.3 KM	A LAT	-1.53 DEG	AB 24.7 KM
A LONG	-7.51 DEG	BC 54.2 KM	A LONG	-8.01 DEG	BC 5.7 KM
B LAT	-3.37 DEG	CD 63.0 KM	B LAT	-2.29 DEG	CD 24.7 KM
B LONG	-7.84 DEG	DA 28.9 KM	B LONG	-8.28 DEG	DA 4.3 KM
C LAT	-2.76 DEG	TILT DISTANCE 56.5	C LAT	-2.23 DEG	TILT DISTANCE 32.4
C LONG	-5.52 DEG		C LONG	-6.46 DEG	
D LAT	-1.01 DEG		D LAT	-1.48 DEG	
D LONG	-6.40 DEG		D LONG	-8.14 DEG	
HIGH RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	-1.35 DEG	AB 62.3 KM	A LAT	-1.53 DEG	AB 24.7 KM
A LONG	-7.51 DEG	BC 54.2 KM	A LONG	-8.01 DEG	BC 5.7 KM
B LAT	-3.37 DEG	CD 63.0 KM	B LAT	-2.29 DEG	CD 24.7 KM
B LONG	-7.84 DEG	DA 28.9 KM	B LONG	-8.28 DEG	DA 4.3 KM
C LAT	-2.76 DEG	TILT DISTANCE 56.5	C LAT	-2.23 DEG	TILT DISTANCE 32.4
C LONG	-5.52 DEG		C LONG	-6.46 DEG	
D LAT	-1.01 DEG		D LAT	-1.48 DEG	
D LONG	-6.40 DEG		D LONG	-8.14 DEG	
MEDIUM RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	-1.41 DEG	AB 62.2 KM	A LAT	-1.58 DEG	AB 24.7 KM
A LONG	-7.36 DEG	BC 54.2 KM	A LONG	-7.87 DEG	BC 5.7 KM
B LAT	-3.43 DEG	CD 62.9 KM	B LAT	-2.35 DEG	CD 24.7 KM
B LONG	-7.70 DEG	DA 28.9 KM	B LONG	-8.14 DEG	DA 4.3 KM
C LAT	-2.81 DEG	TILT DISTANCE 56.5	C LAT	-2.28 DEG	TILT DISTANCE 32.4
C LONG	-5.38 DEG		C LONG	-6.31 DEG	
D LAT	-1.07 DEG		D LAT	-1.53 DEG	
D LONG	-6.25 DEG		D LONG	-8.00 DEG	
HIGH RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	-1.41 DEG	AB 62.2 KM	A LAT	-1.58 DEG	AB 24.7 KM
A LONG	-7.36 DEG	BC 54.2 KM	A LONG	-7.87 DEG	BC 5.7 KM
B LAT	-3.43 DEG	CD 62.9 KM	B LAT	-2.35 DEG	CD 24.7 KM
B LONG	-7.70 DEG	DA 28.9 KM	B LONG	-8.14 DEG	DA 4.3 KM
C LAT	-2.81 DEG	TILT DISTANCE 56.5	C LAT	-2.28 DEG	TILT DISTANCE 32.4
C LONG	-5.38 DEG		C LONG	-6.31 DEG	
D LAT	-1.07 DEG		D LAT	-1.53 DEG	
D LONG	-6.25 DEG		D LONG	-8.00 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

3114
YR-MO-DY
HR.MI:SECTIME
670219
075349.31

S/C POSITION

ALT 43.97 KM
ALT RT 0.0051 KM/SEC
LAT -0.97 DEG
LONG -7.54 DEG

S/C ORIENTATION

TILT ANG 35.35 DEG
SWING ANG 0.39 DEG
N.DEV. 334.57 DEG

PHOTO ILLUMINATION

SUN AZIM 93.88 DEG
INCID ANG. 71.12 DEG
EMISS ANG 36.39 DEG
PHASE ANG 62.86 DEG
ALPHA 3.49 DEG

PRINCIPAL POINT

LATITUDE -1.94 DEG
LONGITUDE -7.92 DEG

MISSION/

FRAME NO.

3115
YR-MO-DY
HR.MI:SECTIME
670219
075351.71

S/C POSITION

ALT 43.98 KM
ALT RT 0.0064 KM/SEC
LAT -1.03 DEG
LONG -7.43 DEG

S/C ORIENTATION

TILT ANG 35.35 DEG
SWING ANG 0.14 DEG
N.DEV. 334.56 DEG

PHOTO ILLUMINATION

SUN AZIM 90.86 DEG
INCID ANG 70.98 DEG
EMISS ANG 36.39 DEG
PHASE ANG 62.86 DEG
ALPHA 3.30 DEG

PRINCIPAL POINT

LATITUDE -1.99 DEG
LONGITUDE -7.78 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 62.4 KM

BC 54.2 KM

CD 62.7 KM

DA 28.9 KM

TILT DISTANCE

56.5

C LONG

-8.17 DEG

D LONG

-1.59 DEG

D LONG

-7.85 DEG

HIGH RESOLUTION

MISSION/

FRAME NO.

3115
YR-MO-DY
HR.MI:SECTIME
670219
075351.71

S/C POSITION

ALT 43.98 KM
ALT RT 0.0064 KM/SEC
LAT -1.03 DEG
LONG -7.43 DEG

S/C ORIENTATION

TILT ANG 35.35 DEG
SWING ANG 0.14 DEG
N.DEV. 334.56 DEG

PHOTO ILLUMINATION

SUN AZIM 90.86 DEG
INCID ANG 70.98 DEG
EMISS ANG 36.39 DEG
PHASE ANG 62.86 DEG
ALPHA 3.30 DEG

PRINCIPAL POINT

LATITUDE -1.99 DEG
LONGITUDE -7.78 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 24.7 KM

BC 5.7 KM

CD 24.7 KM

DA 4.3 KM

TILT DISTANCE

MISSION/

FRAME NO.

3115
YR-MO-DY
HR.MI:SECTIME
670219
075351.71

S/C POSITION

ALT 43.98 KM
ALT RT 0.0064 KM/SEC
LAT -1.03 DEG
LONG -7.43 DEG

S/C ORIENTATION

TILT ANG 35.35 DEG
SWING ANG 0.14 DEG
N.DEV. 334.56 DEG

PHOTO ILLUMINATION

SUN AZIM 90.86 DEG
INCID ANG 70.98 DEG
EMISS ANG 36.39 DEG
PHASE ANG 62.86 DEG
ALPHA 3.30 DEG

PRINCIPAL POINT

LATITUDE -1.99 DEG
LONGITUDE -7.78 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 24.7 KM

BC 5.7 KM

CD 24.7 KM

DA 4.3 KM

TILT DISTANCE

MISSION/

FRAME NO.

3115
YR-MO-DY
HR.MI:SECTIME
670219
075351.71

S/C POSITION

ALT 43.98 KM
ALT RT 0.0064 KM/SEC
LAT -1.03 DEG
LONG -7.43 DEG

S/C ORIENTATION

TILT ANG 35.35 DEG
SWING ANG 0.14 DEG
N.DEV. 334.56 DEG

PHOTO ILLUMINATION

SUN AZIM 90.86 DEG
INCID ANG 70.98 DEG
EMISS ANG 36.39 DEG
PHASE ANG 62.86 DEG
ALPHA 3.30 DEG

PRINCIPAL POINT

LATITUDE -1.99 DEG
LONGITUDE -7.78 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 24.7 KM

BC 5.7 KM

CD 24.7 KM

DA 4.3 KM

TILT DISTANCE

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

3116 YR, MO, DY 670219 ALT 46.54 KM TILT ANG 6.36 DEG SUN AZIM 90.21 DEG INCID ANG 65.82 DEG LAT RT 0.0507 KM/SEC TILT AZIM 196.79 DEG EMISS ANG 6.53 DEG LAT -2.94 DEG SWING ANG 355.72 DEG PHASE ANG 64.11 DEG LONG -4.34 DEG N.DEV. 338.83 DEG ALPHA 1.55 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.72 DEG	AB 38.7 KM
A LONG -3.69 DEG	BC 34.0 KM
B LAT -3.93 DEG	CD 38.5 KM
B LONG -4.19 DEG	DA 31.9 KM
C LAT -3.53 DEG	TILT DISTANCE 6.8
C LONG -5.15 DEG	
D LAT -2.36 DEG	
D LONG -4.65 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.88 DEG	AB 17.0 KM
A LONG -4.23 DEG	BC 4.3 KM
B LAT -3.40 DEG	CD 16.9 KM
B LONG -4.43 DEG	DA 4.1 KM
C LAT -3.35 DEG	TILT DISTANCE 67.9
C LONG -4.56 DEG	
D LAT -2.83 DEG	
D LONG -4.36 DEG	

MISSION/
FRAME NO.

3117 YR, MO, DY 670219 ALT 46.97 KM TILT ANG 6.42 DEG SUN AZIM 90.09 DEG INCID ANG 65.33 DEG LAT RT 0.0559 KM/SEC TILT AZIM 192.30 DEG EMISS ANG 6.59 DEG LAT -3.12 DEG SWING ANG 351.23 DEG PHASE ANG 64.11 DEG LONG -3.86 DEG N.DEV. 338.85 DEG ALPHA 1.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.91 DEG	AB 39.2 KM
A LONG -3.20 DEG	BC 34.3 KM
B LAT -4.13 DEG	CD 38.8 KM
B LONG -3.62 DEG	DA 31.3 KM
C LAT -3.72 DEG	TILT DISTANCE 8.8
C LONG -4.67 DEG	
D LAT -2.54 DEG	
D LONG -4.17 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -3.06 DEG	AB 17.1 KM
A LONG -3.75 DEG	BC 4.4 KM
B LAT -3.59 DEG	CD 17.1 KM
B LONG -3.95 DEG	DA 4.2 KM
C LAT -3.54 DEG	TILT DISTANCE 68.5
C LONG -4.08 DEG	
D LAT -3.01 DEG	
D LONG -3.88 DEG	

PHOTO ILLUMINATION

SUN AZIM	INCID ANG	EMISS ANG	PHASE ANG
90.09 DEG	65.33 DEG	6.59 DEG	64.11 DEG
17.0 KM	4.3 KM	4.2 KM	1.35 DEG

PRINCIPAL POINT

LATITUDE	LONGITUDE
-3.29 DEG	-4.39 DEG
17.0 KM	4.3 KM

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

3118 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT 47.45 KM TILT ANG 6.51 DEG SUN AZIM 89.98 DEG LATITUDE -3.48 DEG
 HR, MI, SEC ALT RT 0.0592 KM/SEC TILT AZIM 187.84 DEG INCID ANG 64.84 DEG LONGITUDE -3.42 DEG
 LAT -3.31 DEG SWING ANG 346.77 DEG EMISS ANG 6.69 DEG
 LONG -3.40 DEG N.DEV. 338.88 DEG PHASE ANG 64.11 DEG
 - - - ALPHA 0.55 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -3.09 DEG AB 39.8 KM
 A LONG -2.70 DEG BC 34.7 KM
 B LAT -4.33 DEG CD 39.1 KM
 B LONG -3.12 DEG DA 31.6 KM
 C LAT -3.51 DEG TILT DISTANCE
 C LONG -4.19 DEG 9.0
 D LAT -2.72 DEG
 D LONG -3.68 DEG

S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 ALT 47.97 KM TILT ANG 6.65 DEG SUN AZIM 89.86 DEG LATITUDE -3.67 DEG
 ALT RT 0.0635 KM/SEC TILT AZIM 183.44 DEG INCID ANG 64.34 DEG LONGITUDE -2.92 DEG
 LAT -3.49 DEG SWING ANG 342.37 DEG EMISS ANG 6.83 DEG
 LONG -2.91 DEG N.DEV. 338.90 DEG PHASE ANG 64.11 DEG
 - - - ALPHA 0.03 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -3.28 DEG AB 40.4 KM
 A LONG -2.19 DEG BC 35.1 KM
 B LAT -4.54 DEG CD 39.4 KM
 B LONG -2.61 DEG DA 32.0 KM
 C LAT -4.10 DEG TILT DISTANCE
 C LONG -3.69 DEG 9.1
 D LAT -2.51 DEG
 D LONG -3.18 DEG

S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 ALT 47.97 KM TILT ANG 6.65 DEG SUN AZIM 89.86 DEG LATITUDE -3.67 DEG
 ALT RT 0.0635 KM/SEC TILT AZIM 183.44 DEG INCID ANG 64.34 DEG LONGITUDE -2.92 DEG
 LAT -3.49 DEG SWING ANG 342.37 DEG EMISS ANG 6.83 DEG
 LONG -2.91 DEG N.DEV. 338.90 DEG PHASE ANG 64.11 DEG
 - - - ALPHA 0.03 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -3.25 DEG AB 17.3 KM
 A LONG -3.26 DEG BC 4.4 KM
 B LAT -3.78 DEG CD 17.3 KM
 B LONG -3.46 DEG DA 4.2 KM
 C LAT -3.73 DEG TILT DISTANCE
 C LONG -3.59 DEG 69.5
 D LAT -3.20 DEG
 D LONG -3.39 DEG

S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 ALT 47.97 KM TILT ANG 6.65 DEG SUN AZIM 89.86 DEG LATITUDE -3.67 DEG
 ALT RT 0.0635 KM/SEC TILT AZIM 183.44 DEG INCID ANG 64.34 DEG LONGITUDE -2.92 DEG
 LAT -3.49 DEG SWING ANG 342.37 DEG EMISS ANG 6.83 DEG
 LONG -2.91 DEG N.DEV. 338.90 DEG PHASE ANG 64.11 DEG
 - - - ALPHA 0.03 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION /

FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3129	YR-MO-DY	670219	ALT 45.33 ALT RT -0.0209 LAT 0.03 LONG -15.93	KM KM/SEC DEG DEG	TILT ANG 56.24 TILT AZIM 257.95 SWING ANG 27.42 N.DEV.	SUN AZIM 91.33 DEG INCID ANG 77.46 DEG EMISS ANG 60.90 DEG PHASE ANG 14.87 DEG
	HR-MI-SEC	161624.51				

MEDIUM RESOLUTION					
CORNER	COORDINATE	SIDE LENGTH	AB	BC	CD
A LAT	-0°-42'	DEG	58.9	KM	
A LONG	-17°-67'	DEG	341.4	KM	
B LAT	-6°-59'	DEG	95.3	KM	
B LONG	-24°-69'	DEG	54.6	KM	TILT DISTANCE
C LAT	-1°-45'	DEG			
C LONG	-18°-26'	DEG			
D LAT	0°-05'	DEG			
D LONG	-18°-35'	DEG			

HIGH RESOLUTION	
CORNER	COORDINATE
A LAT	-0° 33' DEG
A LONG	-18° 19' DEG
B LAT	-2° 17' DEG
B LONG	-22° 26' DEG
C LAT	-2° 35' DEG
C LONG	-25° 19' DEG
D LAT	-0° 14' DEG
D LONG	-18° 47' DEG

MISSION /
FRAME NO.
3121

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR, MO, DY	670619	ALT 1463.15 KM	TIILT ANG 12.74 DEG	SUN AZIM 277.46 DEG	LATITUDE -24.15 DEG
HR, HI, SEC	1922 C.21	ALT RT 0.3159 KM/SEC	TIILT AZIM 182.56 DEG	INCID ANG 70.43 DEG	LONGITUDE 126.59 DEG
		LAT -12.92 DEG	SWING ANG 184.08 DEG	EWISS ANG 23.98 DEG	
		LONG 127.09 DEG	N.DEV. 181.32 DEG	PHASE ANG 70.19 DEG	
					ALPHA -1.68 DEG

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	-50.03 DEG	AB	324.7 KM
A LONG	80.48 DEG	BC	09.0 KM
B LAT	-4.17 DEG	CD	641.4 KM
B LONG	108.95 DEG	DA	650.1 KM
C LAT	-3.53 DEG	TILT DISTANCE	
C LONG	142.81 DEG	18.1	
D LAT	-51.39 DEG		
D LONG	177.74 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

3122 TIME S/C POSITION S/C ORIENTATION
 YR, MO, DY ALT RT KM TILT ANG DEG
 HR, MI, SEC 214554.91 ALT RT -0.0565 KM/SEC TILT AZIM DEG
 LAT -1.54 SWING ANG 1.52 DEG
 LONG -21.72 N.DEV. 338.32 CEG PHASE ANG 72.46 DEG
 ALPHA 5.12 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.48 DEG	AB 44.5 KM
A LONG -21.20 DEG	BC 4.0.5 KM
B LAT 0.06 DEG	CD 44.8 KM
B LONG -21.57 DEG	DA 30.9 KM
C LAT 0.52 DEG	TILT DISTANCE 25.2
C LONG -22.33 DEG	
D LAT 1.84 DEG	
D LONG -22.16 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.48 DEG	AB 19.2 KM
A LONG -21.74 DEG	BC 4.9 KM
B LAT 0.73 DEG	CD 19.2 KM
B LONG -21.95 DEG	DA 4.3 KM
C LAT 0.78 DEG	TILT DISTANCE 93.2
C LONG -22.10 DEG	
D LAT 1.37 DEG	
D LONG -21.87 DEG	

MISSION/
FRAME NO.

3123 TIME S/C POSITION S/C ORIENTATION
 YR, MO, DY ALT RT KM TILT ANG DEG
 HR, MI, SEC 011317.41 ALT RT -0.0324 KM/SEC TILT AZIM 0.23 DEG
 LAT 34.08 SWING ANG 168.74 DEG
 LONG -27.59 N.DEV. 348.02 DEG PHASE ANG 85.40 DEG
 ALPHA -18.90 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 14.76 DEG	AB 306.4 KM
A LONG -22.87 DEG	BC 52.0 KM
B LAT 4.69 DEG	CD 89.7 KM
B LONG -27.01 DEG	DA 169.1 KM
C LAT 5.14 DEG	TILT DISTANCE 87.6
C LONG -28.67 DEG	
D LAT 10.91 DEG	
D LONG -30.28 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 15.70 DEG	AB 297.8 KM
A LONG -26.51 DEG	BC 9.7 KM
B LAT 5.85 DEG	CD 104.1 KM
B LONG -27.54 DEG	DA 105.8 KM
C LAT 5.97 DEG	TILT DISTANCE 27.7
C LONG -27.84 DEG	
D LAT 16.05 DEG	
D LONG -27.73 DEG	

PHOTO ILLUMINATION	PRINCIPAL POINT
SUN AZIM 91.71 DEG	LATITUDE 1.07 DEG
INCID ANG 78.15 DEG	LONGITUDE -21.91 DEG
EMISS ANG 18.09 DEG	
PHASE ANG 72.46 DEG	
ALPHA 5.12 DEG	

PHOTO ILLUMINATION	PRINCIPAL POINT
SUN AZIM 92.52 DEG	LATITUDE 7.67 DEG
INCID ANG 82.30 DEG	LONGITUDE -27.57 DEG
EMISS ANG 71.46 DEG	
PHASE ANG 85.40 DEG	
ALPHA -18.90 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST APPENDED BY MISSION AND SPANISH NUMBERED

MISSIONS

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
670220 044432.19	ALT 45.73 KH ALT RT -0.0002 KH/SEC LAT -0.62 DEG LONG -20.09 DEG	TILT ANG 0.25 DEG TILT AZIM 225.42 DEG SWING ANG 24.32 DEG N.DEV. 338.90 DEG	SUN AZIM 91.33 DEG INCID ANG 72.77 DEG EMISS ANG 0.26 DEG PHASE ANG 72.59 DEG ALPHA 2.18 DEG.	LATITUDE -2.62 DEG LONGITUDE -20.10 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	-0.24 DEG	AB 37.3 KM
A LONG	-15.38 DEG	BC 31.7 KM
B LAT	-1.39 DEG	CD 37.4 KM
B LONG	-15.83 DEG	DA 31.6 KM
C LAT	-1.01 DEG	TIKT DISTANCE
C LONG	-20.80 DEG	0.3
D LAT	0.14 DEG	
D LONG	-20.35 DEG	

HIGH RESOLUTION					
CORNER	COORDINATE	SIDE	LENGTH		
A LAT	-0° 39' DEG	AB	16.4 KM		
A LONG	-19° 54' DEG	BC	4.1 KM		
B LAT	-0° 50' DEG	CD	15.4 KM		
B LONG	-20° 13' DEG	DA	4.1 KM		
C LAT	-0° 45' DEG	TILT DISTANCE			
C LONG	-20° 26' DEG				
D LAT	-0° 34' DEG				
D LONG	-20° 06' DEG				

FRAME NO. 125

	KN	KM/SEC	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG
ALT	45.71	-0.0071	TILT	ANG	0.23	SUN	AZIM	91.31	LATITUDE	-0.67	DEG
ALT RT	-	-	TILT	AZIM	195.63	INCID	ANG	72.65	LONGITUDE	-19.98	DEG
LAT	-0.66	-	SWING	ANG	354.53	SWISS	ANG	0.24			
LONG	-19.98	-	N.DEV.		338.90	PHASE	ANG	72.65			
						ALPHA		0.06			

MEDIUM RESOLUTION		HIGH RESOLUTION			
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	-C 2B DEG	AB	37.3 KM	A LAT	-9.44 DEG
A LONG	-19.27 DEG	BC	31.7 KM	A LONG	-19.82 DEG
B LAT	-1.43 DEG	CD	37.4 KM	B LAT	-9.95 DEG
B LONG	-19.71 DEG	DA	31.6 KM	B LONG	-20.01 DEG
C LAT	-1.06 DEG	TILT DISTANCE		C LAT	-9.90 DEG
C LONG	-20.63 DEG	0.2		C LONG	-20.14 DEG
D LAT	0.69 DEG	DISTANC		D LAT	-9.39 DEG
D LONG	-20.24 DEG	2.4		D LONG	-19.94 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORT DATA

FULL LIST DOCKED BY MISSION AND FRAME NUMBER

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INDONESIA

FRAME NO.
3126 YR. MO
HR. MI

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	45.70 KN	TILT ANG 0.27 DEG	SUN AZIM 91.30 DEG
ALT RT	-0.0061 KN/SEC	TILT AZIM 168.51 DEG	TINCID ANG 72.53 DEG
LAT	-0.71 DEG	SWING ANG 327.42 DEG	EMISS ANG 0.28 DEG
LONG	-19.86 DEG	N.DEV.	PHASE ANG 72.59 DEG
			ALPHA -0.06 DEG

WENTZEL DE SOUZA

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -0°-33' DEG	AB 37°-4' KM	A LAT -0°-49' DEG	AB 16°-4' KM
A LONG -19°-15' DEG	BC 31°-7' KM	A LONG -19°-70' DEG	BC 4°-1' KM
B LAT -1°-48' DEG	CD 37°-3' KM	B LAT -0°-99' DEG	CD 16°-4' KM
B LONG -19°-59' DEG	DA 31°-6' KM	B LONG -19°-89' DEG	DA 4°-1' KM
C LAT -1°-13' DEG	TILT DISTANCE	C LAT -0°-94' DEG	TILT DISTANCE
C LONG -20°-56' DEG	0.2	C LONG -20°-02' DEG	0.2
D LAT 6°-04' DEG		D LAT -0°-44' DEG	
D LONG -20°-12' DEG		D LONG -19°-83' DEG	

MISSION /
NAME NO. •

	S/C POSITION	S/C ORIENTATION
WE	ALT RT ~0.0050 KM/SEC	TILT ANG. 0-35 DEG
0220	45.69 KM	TILT AZIM 151-42 DEG
4438.25	LAT -0-75 DEG	SWING ANG 310-33 DEG
	LONG -19.75 DEG	N.DEV. 338-91 DEG

MEDICAL SECTION

MEDIUM RESOLUTION		SIDE LENGTH	SIDE LENGTH
CORNER COORDINATE	HIGH RESOLUTION	CORNER COORDINATE	CORNER COORDINATE
A LAT	-0.38 DEG	AB 37.4 KM	A LAT -0.53 DEG AB 16.4 KM
A LONG	-19.03 DEG	BC 31.6 KM	A LONG -19.58 DEG BC 4.1 KM
B LAT	-1.53 DEG	CD 37.3 KM	B LAT -1.04 DEG CD 1d.4 KM
B LONG	-19.47 DEG	DA 31.6 KM	B LONG -19.77 DEG DA 4.1 KM
C LAT	-1.15 DEG	TILT DISTANCE	
C LONG	-20.44 DEG	0.3	
D LAT	-0.00 DEG		
D LONG	-20.00 DEG		
			TILT DISTANCE 3.7

CURNER	COORDINATE	SIDE	LENGTH	DISTAN
A LAT	-0°-53 DEG	AB	16.4 KM	
A LONG	-19°-58 DEG	BC	4.1 KM	
B LAT	-1°-04 DEG	CO	16.4 KM	
B LONG	-19°-77 DEG	DA	4.1 KM	
C LAT	-0°-99 DEG			TILT DISTAN
C LONG	-19°-90 DEG			3.7
D LAT	-0°-74 DEG			
D LONG	-19°-74 DEG			

LUNAR CRBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3128	YR. MO. DY HR. MI. SEC	670220 044440.27	ALT 45.68 KN ALT RT -0.0040 KM/SEC LAT -0.85 DEG LONG -15.63 DEG	TILT ANG 0.46 DEG TILT AZIM 141.37 DEG SWING ANG 360.28 DEG N.DEV. 338.91 DEG	SUN AZIM 91.26 DEG INCID ANG 72.29 DEG EMISS ANG 3.47 DEG PHASE ANG 72.59 DEG ALPHA -0.30 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -0.42 DEG	AB 37.4 KM	CORNER COORDINATE SIDE LENGTH
A LONG -15.51 DEG	BC 31.5 KM	A LAT -0.58 DEG AB 16.4 KM
B LAT -1.57 DEG	CD 37.3 KM	A LONG -19.46 DEG BC 4.1 KM
B LONG -15.35 DEG	DA 31.6 KM	B LAT -1.09 DEG CD 16.4 KM
C LAT -1.20 DEG	TILT DISTANCE 0.5	B LONG -19.66 DEG DA 4.1 KM
C LONG -20.32 DEG		C LAT -1.94 DEG TILT DISTANCE 4.8
D LAT -0.05 DEG		C LONG -19.78 DEG D LAT -0.53 DEG
D LONG -15.88 DEG		D LONG -19.59 DEG ALPHA -0.42 DEG

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3129	YR. MO. DY HR. MI. SEC	670221 044442.29	ALT 45.67 KN ALT RT -0.0029 KM/SEC LAT -0.85 DEG LONG -19.51 DEG	TILT ANG 0.57 DEG TILT AZIM 135.12 DEG SWING ANG 294.23 DEG N.DEV. 338.91 DEG	SUN AZIM 91.25 DEG INCID ANG 72.17 DEG EMISS ANG 0.58 DEG PHASE ANG 72.59 DEG ALPHA -0.42 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -0.47 DEG	AB 37.4 KM	CORNER COORDINATE SIDE LENGTH
A LONG -18.79 DEG	BC 31.6 KM	A LAT -0.63 DEG AB 16.4 KM
B LAT -1.52 DEG	CD 37.2 KM	A LONG -19.34 DEG BC 4.1 KM
B LONG -15.23 DEG	DA 31.6 KM	B LAT -1.13 DEG CD 16.4 KM
C LAT -1.24 DEG	TILT DISTANCE 0.5	B LONG -19.54 DEG DA 4.1 KM
C LONG -20.20 DEG		C LAT -1.98 DEG TILT DISTANCE 6.0
D LAT -0.10 DEG		C LONG -19.66 DEG D LAT -0.58 DEG
D LONG -15.76 DEG		D LONG -19.47 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

3130 YR, MO, DY 670220 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 HR, MI, SEC 044444.31 ALT 45°67 KM TILT ANG 0.68 DEG SUN AZIM 91°23 DEG LATITUDE -0.9° DEG
 ALT RT -0.0019 KM/SEC TILT AZIM 130°94 DEG INCID ANG 72°05 DEG LONGITUDE -19.59 DEG
 LAT -0°89 DEG SWING ANG 289°85 DEG EMISS ANG 0°70 DEG
 LONG -19.40 DEG NDEV. 338°91 DEG PHASE ANG 72°59 DEG
 ALPHA -0°54 DEG

MISSION/
FRAME NO.

3131 YR, MO, DY 670220 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 HR, MI, SEC 044446.33 ALT 45°67 KM TILT ANG 0.80 DEG SUN AZIM 91°22 DEG LATITUDE -0.95 DEG
 ALT RT -0.0008 KM/SEC TILT AZIM 127°98 DEG INCID ANG 71°93 DEG LONGITUDE -19.27 DEG
 LAT -0°94 DEG SWING ANG 286°90 DEG EMISS ANG 0°82 DEG
 LONG -19.28 DEG NDEV. 338°92 DEG PHASE ANG 72°59 DEG
 ALPHA -0°66 DEG

MISSION/
FRAME NO.

3130 YR, MO, DY 670220 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 HR, MI, SEC 044444.31 ALT 45°67 KM TILT ANG 0.68 DEG SUN AZIM 91°23 DEG LATITUDE -0.9° DEG
 ALT RT -0.0019 KM/SEC TILT AZIM 130°94 DEG INCID ANG 72°05 DEG LONGITUDE -19.59 DEG
 LAT -0°89 DEG SWING ANG 289°85 DEG EMISS ANG 0°70 DEG
 LONG -19.40 DEG NDEV. 338°91 DEG PHASE ANG 72°59 DEG
 ALPHA -0°54 DEG

MISSION/
FRAME NO.

3131 YR, MO, DY 670220 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 HR, MI, SEC 044446.33 ALT 45°67 KM TILT ANG 0.80 DEG SUN AZIM 91°22 DEG LATITUDE -0.95 DEG
 ALT RT -0.0008 KM/SEC TILT AZIM 127°98 DEG INCID ANG 71°93 DEG LONGITUDE -19.27 DEG
 LAT -0°94 DEG SWING ANG 286°90 DEG EMISS ANG 0°82 DEG
 LONG -19.28 DEG NDEV. 338°92 DEG PHASE ANG 72°59 DEG
 ALPHA -0°66 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -0°52 DEG	AB 37°5 KM	A LAT -0°67 DEG	AB 16°4 KM
A LONG -18°67 DEG	BC 31°6 KM	A LONG -19°22 DEG	BC 4°1 KM
B LAT -1°67 DEG	CD 37°2 KM	B LAT -1°18 DEG	CD 16°4 KM
B LONG -19°11 DEG	DA 31°6 KM	B LONG -19°42 DEG	DA 4°1 KM
C LAT -1°29 DEG	TILT DISTANCE 0.8	C LAT -1°13 DEG	TILT DISTANCE 7.2
C LONG -20°08 DEG		C LONG -19°55 DEG	
D LAT -0°15 DEG		D LAT -0°63 DEG	
D LONG -19°54 DEG		D LONG -19°35 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -0°67 DEG	AB 16°4 KM	A LAT -0°72 DEG	AB 16°4 KM
A LONG -19°11 DEG	BC 4°1 KM	A LONG -19°11 DEG	BC 4°1 KM
B LAT -1°23 DEG	CD 16°4 KM	B LAT -1°23 DEG	CD 16°4 KM
B LONG -19°30 DEG	DA 4°1 KM	B LONG -19°30 DEG	DA 4°1 KM
C LAT -1°18 DEG	TILT DISTANCE .8.5	C LAT -1°18 DEG	TILT DISTANCE .8.5
C LONG -19°43 DEG		C LONG -19°43 DEG	
D LAT -0°67 DEG		D LAT -0°67 DEG	
D LONG -19°23 DEG		D LONG -19°23 DEG	

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MISSION / FRAME NO.	TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		YR . MO . DY	HR . MI . SEC	ALT	TILT ANG	SUN AZIM	LATITUDE	LONGITUDE	
3132	072220	46°37' KM	33°00' DEG	90°30' DEG	-3.23 DEG				
	061418.61	ALT RT	0.0311 KM/SEC	TILT AZIM 201.67°	68.83 DEG				
		LAT	-2.30 DEG	INCID ANG	34.10 DEG				
		LONG	-17.59 DEG	SWING ANG	0.74 CEG				
			N.DEV.	N.DEV.	334.86 CEG				
						60.57 DEG			
							APHA	3.53 DEG	

MEDIUM RESOLUTION		HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	CORNER	COORDINATE	SIDE LENGTH
A LAT	-2°.77 DEG	AB 60.8 KM	A LAT	-2°.93 DEG	AB 2.1 KM
A LONG	-17°.24 DEG	BC 53.6 KM	A LONG	-17°.76 DEG	BC .4 KM
B LAT	-4°.73 DEG	CD 61.5 KM	B LAT	-3°.69 DEG	CD 2.4 KM
B LONG	-17°.60 DEG	DA 30.2 KM	B LONG	-18°.04 DEG	DA .4 KM
C LAT	-4°.11 DEG	TILT DISTANCE		C LAT	-3°.62 DEG
C LONG	-15°.26 DEG	51.9	C LONG	-18.22 DEG	TILT .9 KM
D LAT	-2°.40 DEG			D LAT	-2°.88 DEG
D LONG	-18.17 DEG			D LONG	-17.90 DEG

MISSION / FRAME NO.	TIME YR. MO. DY HR. MI. SEC	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT	
3133	670220 081428.61	ALT ALT RT LAT LONG	46.70 KH 0.0162 KH/SEC -2.52 DEG -17.03 DEG	TILT ANG TILT AZIM SWING ANG N.DEV.	SUN AZIM INCID ANG EMISS ANG PHASE ANG	90.18 DEG 68.25 DEG 34.10 DEG 60.57 DEG
					POINT	-3.46 DFG -17.39 DEG
					LATITUDE	
					LONGITUDE	

MEDIUM RESOLUTION		HIGH RESOLUTION		TILT DISTANCE	
CORNER	COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	
A	LAT -2° 58' DEG	AB 61.7 KM	A LAT	-3° 16' DEG	AB 24.7 KM
A	LONG -16° 65' DEG	BC 54.3 KM	A LONG	-17° 19' DEG	AC 5.8 KM
B	LAT -4° 58' DEG	CD 61.5 KM	B LAT	-3° 92' DEG	CD 24.7 KM
B	LONG -17° 02' DEG	DA 30.4 KM	B LONG	-17° 46' DEG	DA 4.5 KM
C	LAT -4° 33' DEG	TILT DISTANCE 51.9	C LAT	-3° 85' DEG	
C	LONG -18° 68' DEG		C LONG	-17° 54' DEG	
D	LAT -2° 62' DEG	TILT DISTANCE 97.2	D LAT	-3° 10' DEG	
D	LONG -17° 59' DEG		D LONG	-17° 33' DEG	

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MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3134 YR.MD.DY HR.MI.SEC	670220 061436.51	ALT RT LAT LONG	47.08 KM 0.0413 KM/SEC -2.74 DEG -16.46 DEG	TILT ANG 33.10 DEG TILT AZIM 199.96 DEG SWING ANG 358.52 DEG N.DEV. 334.82 DEG	SUN AZIM 90.05 DEG INCID ANG 67.67 DEG EMISS ANG 34.11 DEG PHASE ANG 60.57 DEG ALPHA 2.13 DEG
MEDIUM RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT A LONG. B LAT B LONG C LAT C LONG D LAT D LONG	-2.21 DEG -16.66 DEG -5.25 DEG -16.43 DEG -4.56 DEG -18.09 DEG -2.84 DEG -17.31 DEG	AB 62.7 KM BC 54.5 KM CD 61.6 KM DA 30.7 KM TIILT DISTANCE 51.9			
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	-3.39 DEG -16.61 DEG -4.16 DEG -16.88 DEG -4.09 DEG -17.04 DEG -3.33 DEG -16.75 DEG	AB 25.0 KM BC 5.8 KM CD 24.9 KM DA 4.6 KM TIILT DISTANCE 97.3			
MEDIUM RESOLUTION					
MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3135 YR.MD.DY HR.MI.SEC	670220 061448.51	ALT RT LAT LONG	47.52 KM 0.0464 KM/SEC -2.96 DEG -15.88 DEG	TILT ANG 33.11 DEG TILT AZIM 198.99 DEG SWING ANG 357.40 DEG N.DEV. 334.80 DEG	SUN AZIM 89.91 DEG INCID ANG 67.08 DEG EMISS ANG 34.14 DEG PHASE ANG 60.57 DEG ALPHA 1.38 DEG
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT A LONG. B LAT B LONG C LAT C LONG D LAT D LONG	-3.44 DEG -15.47 DEG -5.51 DEG -16.84 DEG -4.79 DEG -17.51 DEG -3.07 DEG -16.42 DEG	AB 63.8 KM BC 55.1 KM CD 61.8 KM DA 31.0 KM TIILT DISTANCE 51.9			
MEDIUM RESOLUTION					
MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3136 YR.MD.DY HR.MI.SEC	670220 061459.51	ALT RT LAT LONG	47.52 KM 0.0464 KM/SEC -2.96 DEG -15.88 DEG	TILT ANG 33.11 DEG TILT AZIM 198.99 DEG SWING ANG 357.40 DEG N.DEV. 334.80 DEG	SUN AZIM 89.91 DEG INCID ANG 67.08 DEG EMISS ANG 34.14 DEG PHASE ANG 60.57 DEG ALPHA 1.38 DEG
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	-3.62 DEG -16.02 DEG -4.40 DEG -16.30 DEG -4.33 DEG -16.48 DEG -3.56 DEG -16.16 DEG	AB 25.2 KM BC 5.9 KM CD 25.1 KM DA 4.6 KM TIILT DISTANCE 97.5			

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

2136 TIME 670220
 YR, MO, DY 114242.31
 HR, MI, SEC 15150.59 S/C POSITION ALT 45.9° KH
 ALT RT 0.0274 KM/SEC SWING ANG 13.56°
 LAT -2.18° DEG N.DEV. 290.28°
 LONG -19.95° DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2.58° DEG AB 61.9 KM
 A LONG -20.90° DEG BC 348.1 KM
 B LAT -9.24° DEG CD 175.7 KM
 B LONG -28.64° DEG DA 43.5 KM
 C LAT -2.12° DEG TILT DISTANCE 62.3
 C LONG -28.50° DEG
 D LAT -1.77° DEG
 D LONG -21.71° DEG

S/C ORIENTATION TILT ANG 52.85° DEG
 TILT AZIM 252.92° DEG INCID ANG 72.17° DEG
 SWING ANG 13.56° CEG 24.15° DEG
 N.DEV. 290.28° DEG PHASE ANG 17.37° DEG
 ALPHA 29.38° DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2.61° DEG AB 126.8 KM
 A LONG -21.91° DEG BC 31.0 KM
 B LAT -4.54° DEG CD 148.5 KM
 B LONG -25.71° DEG DA 7.8 KM
 C LAT -4.24° DEG TILT DISTANCE 41.9
 C LONG -26.69° DEG
 D LAT -2.61° DEG
 D LONG -22.06° DEG

MISSION/
FRAME NO.

2137 TIME 670220
 YR, MO, DY 114242.31 S/C POSITION ALT 48.70° KH
 ALT RT 0.0159 KM/SEC SWING ANG 201.24°
 LAT -1.74° DEG N.DEV. 333.72°
 LONG -22.98° DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2.36° DEG AB 76.7 KM
 A LONG -22.65° DEG BC 65.5 KM
 B LAT -4.86° DEG CD 77.4 KM
 B LONG -23.03° DEG DA 32.4 KM
 C LAT -4.11° DEG TILT DISTANCE 62.1
 C LONG -25.05° DEG
 D LAT -1.58° DEG
 D LONG -23.65° DEG

S/C ORIENTATION TILT ANG 37.94° DEG
 TILT AZIM 201.24° DEG INCID ANG 70.79° DEG
 SWING ANG 0.38° EMISS ANG 39.21° DEG
 N.DEV. 333.72° DEG PHASE ANG 62.20° DEG
 ALPHA 2.76° DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -2.56° DEG AB 29.6 KM
 A LONG -23.22° DEG BC 6.6 KM
 B LAT -3.49° DEG CD 29.6 KM
 B LONG -23.54° DEG DA 4.9 KM
 C LAT -3.31° DEG TILT DISTANCE 75.2
 C LONG -23.75° DEG
 D LAT -2.51° DEG
 D LONG -23.37° DEG

PHOTO ILLUMINATION SUN AZIM 90.51° DEG
 INCID ANG 70.79° DEG

PRINCIPAL POINT LATITUDE -2.92° DEG
 LONGITUDE -23.44° DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/12/71

MISSION /

YR, NO. D-Y	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3138 15115.25	67CZ20 15115.25	ALT RT 0.6173 KM/SEC	4.8*75 KM TILT AZIM 201.02	TILT ANG 37.94 DEG INCID ANG 79.64 DEG.	SUN AZIM 90.48 DEG EMISS ANG 39.21 DEG.
		LAT -1.81 DEG		SWING ANG 0.11 DEG	PHASE ANG 02.23 DEG
		LONG -22.83 DEG	N.DEV.	333.71 DEG	ALPHA 2.49 DEG

MEDIUM RESOLUTION	
CORNER COORDINATE	SIDE LENGTH
A LAT -22.49 DEG	AB 77.1 KM
A LONG -22.49 DEG	BC 55.6 KM
E LAT -4.93 DEG	CD 77.3 KM
B LONG -22.67 DEG	DA 32.4 KM
C LAT -4.17 DEG	TILT DIST 32.4 KM
C LONG -24.90 DEG	
D LAT -2.04 DEG	
D LONG -23.49 DEG	62.1 KM

MISSION /
NAME NO.
3139
YR. NO
H-2

TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
	ALT	KM	TILT ANG	DEG	SUN AZIM	DEG	LATITUDE	DEG
670220 151555.91	48.83	KM	37.94	DEG	-90.45	DEG	-3.35	DEG
	0.0186	KM/SEC	200.01	DEG	70.48	DEG	-23.13	DEG
	-1.86	DEG	SWING ANG	DEG	39.21	DEG		
	-22.68	DEG	N.DEV.	DEG	62.20	DEG		
			PHASE ANG	DEG				
			ALPHA	DEG				

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	ANGLE	SIDE LENGTH	ANGLE
A LAT	-2°-48' DEG	AB 77.2 KM	
A LONG	-22°-33' DEG	BC 65.7 KM	
B LAT	-5°-00' DEG	CD 77.2 KM	
B LONG	-22°-71' DEG	DA 35.4 KM	TILT DISTANCE
C LAT	-4°-22' DEG		62.1
C LONG	-24°-74' DEG		
D LAT	-2°-10' DEG		
D LONG	-23°-22' DEG		

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	-2°.69	DEG
A LONG	-22.90	DEG
B LAT	-3°.61	DEG
B LONG	-23.53	DEG
C LAT	-3°.53	DEG
C LONG	-23.43	DEG
D LAT	-2°.53	DEG
D LONG	-23.00	DEG

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MISSION/

FRAME NO.

3140

TIME

670320

YR. MO. DY

HR. MI. SEC

151158.57

S/C POSITION

AL1

4.8.85 KM

ALT

0.0200 KM/SEC

LAT

-0.192 DEG

LONG

-22.53 DEG

S/C ORIENTATION

TILT ANG

37.94 DEG

TILT AZIM

200.59 DEG

SWING ANG

359.58 DEG

N.DEV.

333.69 DEG

PHASE ANG

62.20 DEG

ALPHA

2.05 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT

-2.54 DEG

AB 77.5 KM

A LONG

-22.18 DEG

BC 65.8 KM

B LAT

-5.07 DEG

CD 77.1 KM

B LONG

-22.55 DEG

DA 32.5 KM

C LAT

-4.28 DEG

TILT DISTANCE

62.1

C LONG

-24.58 DEG

D LAT

-2.16 DEG

D LONG

-23.18 DEG

S/C POSITION
AL1
ALT RT 0.0200 KM/SEC
LAT -0.192 DEG
LONG -22.53 DEG

S/C ORIENTATION
TILT ANG 37.94 DEG
TILT AZIM 200.59 DEG
SWING ANG 359.58 DEG
N.DEV. 333.69 DEG

PHOTO ILLUMINATION
SUN AZIM 90.43 DEG
INCID ANG 70.32 DEG
EMISS ANG 39.21 DEG
PHASE ANG 62.20 DEG
ALPHA 2.05 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.75 DEG AB 29.7 KM
A LONG -22.75 DEG BC 6.6 KM
B LAT -3.67 DEG CD 29.7 KM
B LONG -23.07 DEG DA 4.9 KM
C LAT -3.59 DEG TILT DISTANCE
C LONG -23.28 DEG 75.2
D LAT -2.69 DEG
D LONG -22.90 DEG

PHOTO ILLUMINATION
SUN AZIM 90.39 DEG
INCID ANG 70.16 DEG
EMISS ANG 39.21 DEG
PHASE ANG 62.20 DEG
ALPHA 1.84 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.81 DEG AB 29.7 KM
A LONG -22.59 DEG BC 6.6 KM
B LAT -3.74 DEG CD 29.7 KM
B LONG -22.92 DEG DA 4.9 KM
C LAT -3.66 DEG TILT DISTANCE
C LONG -23.12 DEG 75.3
D LAT -2.75 DEG
D LONG -22.74 DEG

MISSION/

FRAME NO.

3141

TIME

670320

YR. MO. DY

HR. MI. SEC

1511 1.23

S/C POSITION

ALT

4.8.90 KM

TILT ANG

37.94 DEG

TILT AZIM

200.36 DEG

SWING ANG

359.32 DEG

N.DEV.

333.68 DEG

PHASE ANG

62.20 DEG

ALPHA

S/C POSITION
ALT RT 0.0214 KM/SEC
LAT -1.98 DEG
LONG -22.37 DEG

S/C ORIENTATION
TILT ANG 37.94 DEG
TILT AZIM 200.36 DEG
SWING ANG 359.32 DEG
N.DEV. 333.68 DEG

PHOTO ILLUMINATION
SUN AZIM 90.39 DEG
INCID ANG 70.16 DEG
EMISS ANG 39.21 DEG
PHASE ANG 62.20 DEG
ALPHA 1.84 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.60 DEG AB 77.8 KM
A LONG -22.02 DEG BC 65.9 KM
B LAT -5.14 DEG CD 77.0 KM
B LONG -22.40 DEG DA 32.5 KM
C LAT -4.34 DEG TILT DISTANCE
C LONG -24.42 DEG 62.1
D LAT -2.22 DEG
D LONG -23.02 DEG

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MISSION/
FRAME NO.3142
YR-MO-DY
HR,MI,SEC
1511 3.89TIME
570220
S/C POSITION
ALT 48.96 KM
ALT RT 0.0228 KM/SEC
LAT -2.04 DEG
LONG -22.22 DEG
N.DEV.
333.67 DEGS/C ORIENTATION
TILT ANG 37.94 DEG
TILT AZIM 200.16 DEG
SWING ANG 359.05 DEG
N.DEV.
333.67 DEGMISSION RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.66 DEG AB 78.1 KM
A LONG -21.86 DEG BC 65.9 KM
B LAT -5.21 DEG CD 76.9 KM
B LONG -22.24 DEG DA 32.6 KM
C LAT -4.40 DEG TILT DISTANCE
C LONG -24.26 DEG 62.1
D LAT -2.28 DEG
D LONG -22.86 DEGPHOTO ILLUMINATION
PRINCIPAL POINT
SUN AZIM 90.36 DEG
INCID ANG 70.01 DEG
EMISS ANG 39.22 DEG
PHASE ANG 62.20 DEG
ALPHA 1.62 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.87 DEG AB 29.8 KM
A LONG -22.43 DEG BC 6.6 KM
B LAT -3.80 DEG CD 29.7 KM
B LONG -22.76 DEG DA 4.9 KM
C LAT -3.72 DEG TILT DISTANCE
C LONG -22.96 DEG 75.3
D LAT -2.81 DEG
D LONG -22.59 DEGMISSION/
FRAME NO.3143
YR-MO-DY
HR,MI,SEC
1511 6.54TIME
670220
S/C POSITION
ALT 49.02 KM
ALT RT 0.0241 KM/SEC
LAT -2.09 DEG
LONG -22.07 DEG
N.DEV.
333.66 DEGS/C ORIENTATION
TILT ANG 37.95 DEG
TILT AZIM 199.95 DEG
SWING ANG 358.78 DEG
N.DEV.
333.66 DEGPHOTO ILLUMINATION
PRINCIPAL POINT
SUN AZIM 90.33 DEG
INCID ANG 69.85 DEG
EMISS ANG 39.22 DEG
PHASE ANG 62.20 DEG
ALPHA 1.41 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.93 DEG AB 29.8 KM
A LONG -22.28 DEG BC 6.7 KM
B LAT -3.86 DEG CD 29.8 KM
B LONG -22.60 DEG DA 4.9 KM
C LAT -3.78 DEG TILT DISTANCE
C LONG -22.81 DEG 75.3
D LAT -2.87 DEG
D LONG -22.43 DEGPHOTO ILLUMINATION
PRINCIPAL POINT
SUN AZIM 90.33 DEG
INCID ANG 70.01 DEG
EMISS ANG 39.22 DEG
PHASE ANG 62.20 DEG
ALPHA 1.62 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.87 DEG AB 29.8 KM
A LONG -22.43 DEG BC 6.6 KM
B LAT -3.80 DEG CD 29.7 KM
B LONG -22.76 DEG DA 4.9 KM
C LAT -3.72 DEG TILT DISTANCE
C LONG -22.96 DEG 75.3
D LAT -2.81 DEG
D LONG -22.59 DEG

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MISSION/

FRAME NO.

3144

YR.MD.DY

670220

HR.MI.SEC

1511.9.23

TIME

S/C POSITION

ALT

49.09 KM

ALT RT

0.0255 KM/SEC

LAT

-2.15 DEG

LONG

-21.92 DEG

N.DEV.

333.65 DEG

N.DEV.

62.20 DEG

PHASE

ANG

62.20 DEG

ALPHA

1.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT -22.79 DEG

AB 78.7 KM

A LONG -21.54. DEG

BC 66.2 KM

B LAT -25.36. DEG

CD 76.8 KM

B LONG -21.92 DEG

DA 32.7 KM

C LAT -4.51 DEG

TILT DISTANCE

62.1

C LONG -23.55 DEG

D LAT -2.40 DEG

D LONG -22.55 DEG

MISSION/

FRAME NO.

3145

YR.MD.DY

670220

HR.MI.SEC

163552.03

TIME

S/C POSITION

ALT

49.62 KM

ALT RT

0.0320 KM/SEC

LAT

-2.46 DEG

LONG

-23.05 DEG

N.DEV.

339.03 DEG

N.DEV.

66.58 DEG

PHASE

ANG

66.58 DEG

ALPHA

1.88 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT -2.99 DEG

AB 29.9 KM

A LONG -22.32 DEG

BC 6.7 KM

B LAT -3.92 DEG

CD 29.8 KM

B LONG -22.45 DEG

DA 5.0 KM

C LAT -3.84 DEG

TILT DISTANCE

75.4

C LONG -22.65 DEG

D LAT -2.93 DEG

D LONG -22.27 DEG

PRINCIPAL POINT

PHOTO ILLUMINATION

SUN AZIM 90.30 DEG

INCID ANG 69.69 DEG

EMISS ANG 39.23 DEG

PHASE ANG 62.20 DEG

ALPHA 1.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT -2.45 DEG

AB 18.4 KM

A LONG -22.95 DEG

BC 4.7 KM

B LAT -3.02 DEG

CD 18.3 KM

B LONG -23.16 DEG

DA 4.4 KM

C LAT -3.96 DEG

TILT DISTANCE

92.5

C LONG -23.31 DEG

D LAT -2.40 DEG

D LONG -23.09 DEG

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MISSION/

FRAME NO.

3146

YR-MO-DY

183554.18

HR-MI-SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	57220	ALT 49.89 KM ALT RT 0.0331 KM/SEC	TIILT ANG 8.65 DEG TIILT AZIM 195.29 DEG SWING ANG 354.50 DEG	SUN AZIM 90.47 DEG INCID ANG 65.59 DEG EMISS ANG 8.90 DEG	LATITUDE -2.75 DEG LONGITUDE -23.33 DEG
A LAT	-2.34 DEG	N.DEV.	339.03 DEG	PHASE ANG 66.58 DEG	
LONG	-22.93 DEG			ALPHA 1.75 DEG	

MISSION/

FRAME NO.

3147

YR-MO-DY

183556.33

HR-MI-SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	67020	ALT 49.97 KM ALT RT 0.0342 KM/SEC	TIILT ANG 8.66 DEG TIILT AZIM 194.42 DEG SWING ANG 353.62 DEG	SUN AZIM 90.45 DEG. INCID ANG 68.46 DEG. EMISS ANG 8.91 DEG	LATITUDE -2.80 DEG LONGITUDE -22.87 DEG
A LAT	-2.38 DEG	N.DEV.	339.04 DEG	PHASE ANG 66.58 DEG	
LONG	-22.81 DEG			ALPHA 1.62 DEG	

MISSION/

FRAME NO.

3148

YR-MO-DY

183557.33

HR-MI-SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	67020	ALT 49.97 KM ALT RT 0.0342 KM/SEC	TIILT ANG 8.66 DEG TIILT AZIM 194.42 DEG SWING ANG 353.62 DEG	SUN AZIM 90.45 DEG. INCID ANG 68.46 DEG. EMISS ANG 8.91 DEG	LATITUDE -2.80 DEG LONGITUDE -22.87 DEG
A LAT	-2.38 DEG	N.DEV.	339.04 DEG	PHASE ANG 66.58 DEG	
LONG	-22.81 DEG			ALPHA 1.62 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -2.50 DEG	AB 18.4 KM	A LAT -2.55 DEG	AB 18.4 KM
A LONG -22.82 DEG	BC 4.7 KM	A LONG -22.70 DEG	BC 4.7 KM
B LAT -3.07 DEG	CD 18.4 KM	B LAT -3.12 DEG	CD 18.4 KM
B LONG -23.03 DEG	DA 4.4 KM	B LONG -22.91 DEG	DA 4.4 KM
C LAT -3.01 DEG	TILT DISTANCE 92.7	C LAT -3.06 DEG	TILT DISTANCE 92.7
C LONG -23.18 DEG		C LONG -23.18 DEG	
D LAT -2.45 DEG		D LAT -2.50 DEG	
D LONG -22.96 DEG		D LONG -22.83 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
314B

YR, MO, DY	670220	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
HR, MIN, SEC	183552.48	ALT RT	50.04 KM	TILT ANG 8.68 DEG	SUN AZIM 90.42 DEG
		LAT	0.0353 KM/SEC	TILT AZIM 193.55 DEG	INCID ANG 58.33 DEG
		LONG	-2.60 DEG	SWING ANG 352.75 DEG	EMISS ANG 8.93 DEG
			-22.48 DEG	N.DEV. 339.04 DEG	PHASE ANG 66.58 DEG
					ALPHA 1.48 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.43 DEG	AB 42.4 KM
A LONG -21.59 DEG	BC 37.4 KM
B LAT -3.77 DEG	CD 41.9 KM
B LONG -22.42 DEG	DA 33.0 KM
C LAT -3.32 DEG	TILT DISTANCE 12.0
C LONG -23.57 DEG	
D LAT -2.05 DEG	
D LONG -22.01 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	-2.60 DEG
A LONG	-22.57 DEG
B LAT	-3.17 DEG
B LONG	-22.78 DEG
C LAT	-3.11 DEG
C LONG	-22.93 DEG
D LAT	-2.54 DEG
D LONG	-22.71 DEG

MISSION/
FRAME NO.
3149

YR, MO, DY	670220	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
HR, MIN, SEC	18400.64	ALT RT	50.12 KM	TILT ANG 8.69 DEG	SUN AZIM 90.40 DEG
		LAT	0.0365 KM/SEC	TILT AZIM 192.69 DEG	INCID ANG 68.21 DEG
		LONG	-2.65 DEG	SWING ANG 351.68 DEG	EMISS ANG 8.95 DEG
			-22.56 DEG	N.DEV. 339.04 DEG	PHASE ANG 66.58 DEG
					ALPHA 1.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.48 DEG	AB 42.5 KM
A LONG -21.87 DEG	BC 37.5 KM
B LAT -3.82 DEG	CD 41.9 KM
B LONG -22.29 DEG	DA 33.0 KM
C LAT -3.37 DEG	TILT DISTANCE 12.1
C LONG -23.44 DEG	
D LAT -2.10 DEG	
D LONG -22.89 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	-2.65 DEG
A LONG	-22.44 DEG
B LAT	-3.22 DEG
B LONG	-22.65 DEG
C LAT	-3.16 DEG
C LONG	-22.80 DEG
D LAT	-2.59 DEG
D LONG	-22.58 DEG

MISSION/
FRAME NO.
3149

YR, MO, DY	670220	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
HR, MIN, SEC	18400.64	ALT RT	50.12 KM	TILT ANG 8.69 DEG	SUN AZIM 90.40 DEG
		LAT	0.0365 KM/SEC	TILT AZIM 192.69 DEG	INCID ANG 68.21 DEG
		LONG	-2.65 DEG	SWING ANG 351.68 DEG	EMISS ANG 8.95 DEG
			-22.56 DEG	N.DEV. 339.04 DEG	PHASE ANG 66.58 DEG
					ALPHA 1.35 DEG

MISSION/
FRAME NO.
3149

YR, MO, DY	670220	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
HR, MIN, SEC	18400.64	ALT RT	50.12 KM	TILT ANG 8.69 DEG	SUN AZIM 90.40 DEG
		LAT	0.0365 KM/SEC	TILT AZIM 192.69 DEG	INCID ANG 68.21 DEG
		LONG	-2.65 DEG	SWING ANG 351.68 DEG	EMISS ANG 8.95 DEG
			-22.56 DEG	N.DEV. 339.04 DEG	PHASE ANG 66.58 DEG
					ALPHA 1.35 DEG

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MISSION/

FRAME NO. 3150 TIME 670220 S/C POSITION ALT 50.22 KM TILT ANG 8.71 DEG PRINCIPAL POINT SUN AZIM 90.37 DEG LATITUDE -2.95 DEG
 YR.MD.DY 1840 2.79 ALT RT 0.0376 KM/SEC TILT AZIM 191.83 DEG LONGITUDE -22.49 DEG
 HR.MI.SEC

LAT -2.79 DEG SWING ANG 351.02 DEG

LONG -22.44 DEG N.DEV. 339.05 DEG

S/C ORIENTATION PHASE ANG 66.58 DEG

SIDES LENGTH ALPHA 1.22 DEG

MISSION/

FRAME NO. 3151 TIME 670220 S/C POSITION ALT 50.28 KM TILT ANG 8.74 DEG PRINCIPAL POINT SUN AZIM 90.35 DEG LATITUDE -2.99 DEG
 YR.MD.DY 1840 4.94 ALT RT 0.0387 KM/SEC TILT AZIM 190.97 DEG LONGITUDE -22.36 DEG
 HR.MI.SEC

LAT -2.74 DEG SWING ANG 350.16 DEG

LONG -22.31 DEG N.DEV. 339.05 DEG

S/C ORIENTATION PHASE ANG 66.58 DEG

SIDES LENGTH ALPHA 1.09 DEG

MISSION/

FRAME NO. 3151 TIME 670220 S/C POSITION ALT 50.28 KM TILT ANG 8.74 DEG PRINCIPAL POINT SUN AZIM 90.35 DEG LATITUDE -2.99 DEG
 YR.MD.DY 1840 4.94 ALT RT 0.0387 KM/SEC TILT AZIM 190.97 DEG LONGITUDE -22.36 DEG
 HR.MI.SEC

LAT -2.74 DEG SWING ANG 350.16 DEG

LONG -22.31 DEG N.DEV. 339.05 DEG

S/C ORIENTATION PHASE ANG 66.58 DEG

SIDES LENGTH ALPHA 1.09 DEG

MISSION/

FRAME NO. 3150 TIME 670220 S/C POSITION ALT 42.5 KM TILT ANG 8.71 DEG PRINCIPAL POINT SUN AZIM 90.37 DEG LATITUDE -2.95 DEG
 YR.MD.DY 1840 2.79 ALT RT 0.0376 KM/SEC TILT AZIM 191.83 DEG LONGITUDE -22.49 DEG
 HR.MI.SEC

LAT -2.79 DEG SWING ANG 351.02 DEG

LONG -22.44 DEG N.DEV. 339.05 DEG

S/C ORIENTATION PHASE ANG 66.58 DEG

SIDES LENGTH ALPHA 1.22 DEG

MISSION/

FRAME NO. 3151 TIME 670220 S/C POSITION ALT 42.5 KM TILT ANG 8.74 DEG PRINCIPAL POINT SUN AZIM 90.35 DEG LATITUDE -2.99 DEG
 YR.MD.DY 1840 4.94 ALT RT 0.0387 KM/SEC TILT AZIM 190.97 DEG LONGITUDE -22.36 DEG
 HR.MI.SEC

LAT -2.74 DEG SWING ANG 350.16 DEG

LONG -22.31 DEG N.DEV. 339.05 DEG

S/C ORIENTATION PHASE ANG 66.58 DEG

SIDES LENGTH ALPHA 1.09 DEG

MISSION/

FRAME NO. 3150 TIME 670220 S/C POSITION ALT 42.5 KM TILT ANG 8.71 DEG PRINCIPAL POINT SUN AZIM 90.37 DEG LATITUDE -2.95 DEG
 YR.MD.DY 1840 2.79 ALT RT 0.0376 KM/SEC TILT AZIM 191.83 DEG LONGITUDE -22.49 DEG
 HR.MI.SEC

LAT -2.79 DEG SWING ANG 351.02 DEG

LONG -22.44 DEG N.DEV. 339.05 DEG

S/C ORIENTATION PHASE ANG 66.58 DEG

SIDES LENGTH ALPHA 1.22 DEG

MISSION/

FRAME NO. 3151 TIME 670220 S/C POSITION ALT 42.5 KM TILT ANG 8.74 DEG PRINCIPAL POINT SUN AZIM 90.35 DEG LATITUDE -2.99 DEG
 YR.MD.DY 1840 4.94 ALT RT 0.0387 KM/SEC TILT AZIM 190.97 DEG LONGITUDE -22.36 DEG
 HR.MI.SEC

LAT -2.74 DEG SWING ANG 350.16 DEG

LONG -22.31 DEG N.DEV. 339.05 DEG

S/C ORIENTATION PHASE ANG 66.58 DEG

SIDES LENGTH ALPHA 1.09 DEG

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MISSION/
FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3152	670E20 YR, MO, DY HR, MI, SEC	ALT 59.37 KH ALT RT 0.039B KH/SEC LAT -2.79 DEG LONG +22.19 DEG	ALT ANG 8.76 DEG TILT AZIM 190.12 DEG SWING ANG 349.31 DEG N.DEV. 339.06 DEG	SUN AZIM 91.32 DEG INCID ANG 67.82 DEG EMISS ANG 9.02 DEG PHASE ANG 66.58 DEG ALPHA 0.95 DEG	LATITUDE -3.04 DEG LONGITUDE -22.24 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -2.62 DEG A LONG -21.48 DEG	AB 42.8 KM BC 37.7 KM	CORNER COORDINATE SIDE LENGTH A LAT -2.79 DEG AB 18.6 KM A LONG -22.05 DEG BC 4.7 KM
B LAT -3.57 DEG B LONG -21.91 DEG	CD 42.3 KM DA 33.2 KM	B LAT -3.37 DEG CD 18.5 KM B LONG -22.27 DEG DA 4.5 KM
C LAT -2.51 DEG C LONG -23.07 DEG	TILT DISTANCE 12.2	C LAT -3.31 DEG TILT DISTANCE C LONG -22.42 DEG 93.9
D LAT -2.24 DEG D LONG -22.51 DEG		D LAT -2.74 DEG D LONG -22.20 DEG

MISSION/
FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
3153	670E20 YR, MO, DY HR, MI, SEC	ALT 51.11 KH ALT RT 0.0442 KH/SEC LAT -3.01 DEG LONG -23.55 DEG	ALT ANG 2.07 DEG TILT AZIM 41.57 DEG SWING ANG 200.95 DEG N.DEV. 339.37 DEG	SUN AZIM 90.32 DEG INCID ANG 67.34 DEG EMISS ANG 2.13 DEG PHASE ANG 68.76 DEG ALPHA -1.43 DEG	LATITUDE -2.97 DEG LONGITUDE -23.51 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -2.52 DEG A LONG -22.70 DEG	AB 42.0 KM BC 34.9 KM	CORNER COORDINATE SIDE LENGTH A LAT -2.71 DEG AB 18.4 KM A LONG -23.33 DEG BC 4.6 KM
B LAT -3.81 DEG B LONG -23.21 DEG	CD 41.7 KM DA 35.9 KM	B LAT -3.28 DEG CD 18.4 KM B LONG -23.55 DEG DA 4.7 KM
C LAT -3.40 DEG ... C LONG -24.28 DEG	TILT DISTANCE 2.9	C LAT -3.22 DEG TILT DISTANCE C LONG -23.69 DEG 22.9
D LAT -2.11 DEG D LONG -23.81 DEG		D LAT -2.65 DEG D LONG -23.48 DEG

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MISSION/
FRAME NO.3154
YR, MO, DY
HR, MI, SECTIME
670220
220648.11

S/C POSITION
 ALT 51°21' KM
 ALT RT 0.0453 KM/SEC
 LAT -3°06' DEG
 LONG -23°43' DEG

S/C ORIENTATION
 TILT ANG 2.13 DEG
 TILT AZIM -44.97 DEG
 SWING ANG 204.37 DEG
 N.DEV. 339.38 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2°57' DEG AB 42.2 KM
 A LONG -22°57' DEG BC 35.0 KM
 B LAT -3°86' DEG CD 41.7 KM
 B LONG -23°57' DEG DA 36.0 KM
 C LAT -3°45' DEG TILT DISTANCE
 C LONG -24°15' DEG 2.9
 D LAT -2°15' DEG
 D LONG -23°68' DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2°57' DEG AB 18.4 KM
 A LONG -23°21' DEG BC 4.6 KM
 B LAT -3°33' DEG CD 18.4 KM
 B LONG -23°42' DEG DA 4.7 KM
 C LAT -3°27' DEG TILT DISTANCE
 C LONG -23°56' DEG 22.6
 D LAT -2°70' DEG
 D LONG -23°35' DEG

MISSION/
FRAME NO.3155
YR, MO, DY
HR, MI, SECTIME
570220
220650.31

S/C POSITION
 ALT 51°31' KM
 ALT RT 0.0465 KM/SEC
 LAT -3°11' DEG
 LONG -23°30' DEG

S/C ORIENTATION
 TILT ANG 2.18 DEG
 TILT AZIM 48.20 DEG
 SWING ANG 207.61 DEG
 N.DEV. 339.39 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2°51' DEG AB 42.3 KM
 A LONG -22°44' DEG BC 35.0 KM
 B LAT -3°91' DEG CD 41.8 KM
 B LONG -22°94' DEG DA 36.1 KM
 C LAT -3°50' DEG TILT DISTANCE
 C LONG -24°03' DEG 3.0
 D LAT -2°20' DEG
 D LONG -23°56' DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2°51' DEG AB 18.5 KM
 A LONG -23°07' DEG BC 4.6 KM
 B LAT -3°38' DEG CD 18.5 KM
 B LONG -23°29' DEG DA 4.7 KM
 C LAT -3°32' DEG TILT DISTANCE
 C LONG -23°43' DEG 23.2
 D LAT -2°75' DEG
 D LONG -23°22' DEG

PHOTO ILLUMINATION

SUN AZIM 90.30 DEG
 INCID ANG 67.21 DEG
 EMISS ANG 2.19 DEG
 PHASE ANG 68.76 DEG
 ALPHA -1.56 DEG

SUN AZIM 90.27 DEG
 INCID ANG 67.08 DEG
 EMISS ANG 2.25 DEG
 PHASE ANG 68.76 DEG
 ALPHA -1.59 DEG

PRINCIPAL POINT

LATITUDE -3°02 DEG
 LONGITUDE -23°38 DEG

LATITUDE -3°07 DEG
 LONGITUDE -23°25 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

3156 YR, MO, DY 670220 ALT 51°42' KM TILT ANG 2°25' DEG
 HR, MI, SEC 220 642.51 ALT RT 0.0476 KM/SEC TILT AZIM 51.24 DEG INCID ANG 66.95 DEG
 LAT -3°16' DEG SWING ANG 210.66 DEG EMISS ANG 2.32 DEG
 LONG -23.17' DEG N-DEV. 339.43 DEG PHASE ANG 68.76 DEG
 ALPHA -1.81 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2°46' DEG	AB 42.4 KM
A LONG -22.30 DEG	BC 35.1 KM
B LAT -3°07' DEG	CD 41.8 KM
B LONG -22.01 DEG	DA 36.2 KM
C LAT -3°55' DEG	TILT DISTANCE 3.1
C LONG -23°00' DEG	
D LAT -2°25' DEG	
D LONG -23.43 DEG	

S/C POSITION TILT ANG 2°25' DEG SUN AZIM 90°24' DEG
 ALT 51°42' KM TILT AZIM 51.24 DEG INCID ANG 66.95 DEG
 LAT -3°16' DEG SWING ANG 210.66 DEG EMISS ANG 2.32 DEG
 LONG -23.17' DEG N-DEV. 339.43 DEG PHASE ANG 68.76 DEG
 ALPHA -1.81 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2°45' DEG	AB 18.5 KM
A LONG -22.94 DEG	BC 4.6 KM
B LAT -3°43' DEG	CD 18.5 KM
B LONG -23.16 DEG	DA 4.7 KM
C LAT -3°37' DEG	TILT DISTANCE 23.9
C LONG -23.30 DEG	
D LAT -2.80 DEG	
D LONG -23.09 DEG	

MISSION/
FRAME NO.

3157 YR, MO, DY 670220 ALT 51°52' KM TILT ANG 2°32' DEG SUN AZIM 90°21' DEG
 HR, MI, SEC 220 654.71 ALT RT 0.0487 KM/SEC TILT AZIM 51.11 DEG INCID ANG 66.82 DEG
 LAT -3°20' DEG SWING ANG 213.54 DEG EMISS ANG 2.39 DEG
 LONG -23.05 DEG N-DEV. 339.41 DEG PHASE ANG 68.76 DEG
 ALPHA -1.94 DEG

PRINCIPAL POINT
 LATITUDE -3°12' DEG
 LONGITUDE -23.12' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2°40' DEG	AB 18.6 KM
A LONG -22.81 DEG	BC 4.6 KM
B LAT -3°48' DEG	CD 18.5 KM
B LONG -23.03 DEG	DA 4.7 KM
C LAT -3°42' DEG	TILT DISTANCE 24.7
C LONG -23.17' DEG	
D LAT -2.85 DEG	
D LONG -22.96 DEG	

PRINCIPAL POINT
 LATITUDE -3°16' DEG
 LONGITUDE -22.99 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2°40' DEG	AB 18.6 KM
A LONG -22.81 DEG	BC 4.6 KM
B LAT -3°48' DEG	CD 18.5 KM
B LONG -23.03 DEG	DA 4.7 KM
C LAT -3°42' DEG	TILT DISTANCE 24.7
C LONG -23.17' DEG	
D LAT -2.85 DEG	
D LONG -22.96 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

3158 YR, MO, DY 670620 ALT 51°.63 KM S/C ORIENTATION TILT ANG 2°.40 DEG PRINCIPAL POINT SUN AZIM 90°.19 DEG LATITUDE -3°.21 DEG HR, MI, SEC 220656.91 ALT RT 0.0499 KM/SEC TILT AZIM 56°.80 DEG LONGITUDE -22.86 DEG LAT -3°.25 DEG SWING ANG 216°.24 DEG EMIS ANG 2.47 DEG LONG -22.92 DEG N.DEV. 339°.41 DEG PHASE ANG 68°.76 DEG ALPHA -2°.07 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2°.76 DEG	AB 42.7 KM
A LONG -22°.04 DEG	BC 35.3 KM
B LAT -4°.37 DEG	CD 41.9 KM
B LONG -22°.55 DEG	DA 36.3 KM
C LAT -3°.65 DEG	TILT DISTANCE 3.3
C LONG -23°.64 DEG	
D LAT -2°.35 DEG	
D LONG -23.17 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.95 DEG	AB 18.6 KM
A LONG -23.68 DEG	BC 4.6 KM
B LAT -3.53 DEG	CD 18.6 KM
B LONG -22.90 DEG	DA 4.7 KM
C LAT -3.47 DEG	TILT DISTANCE 25.5
C LONG -23.04 DEG	
D LAT -2.90 DEG	
D LONG -22.83 DEG	

MISSION/
FRAME NO.

3159 YR, MO, DY 670620 ALT 51°.74 KM S/C ORIENTATION TILT ANG 2°.48 DEG PRINCIPAL POINT SUN AZIM 90°.16 DEG LATITUDE -3°.26 DEG HR, MI, SEC 220659.11 ALT RT 0.0510 KM/SEC TILT AZIM 59°.32 DEG LONGITUDE -22.73 DEG LAT -3°.30 DEG SWING ANG 218°.76 DEG N.DEV. 339°.42 DEG PHASE ANG 68°.76 DEG ALPHA -2.20 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2°.80 DEG	AB 42.8 KM
A LONG -21°.51 DEG	BC 35.4 KM
B LAT -4°.12 DEG	CD 42.3 KM
B LONG -22°.42 DEG	DA 36.4 KM
C LAT -3°.70 DEG	TILT DISTANCE 3.4
C LONG -23°.51 DEG	
D LAT -2.40 DEG	
D LONG -23.04 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -3.00 DEG	AB 18.7 KM
A LONG -22.55 DEG	BC 4.7 KM
B LAT -3.58 DEG	CD 18.6 KM
B LONG -22.77 DEG	DA 4.7 KM
C LAT -3.52 DEG	TILT DISTANCE 26.3
C LONG -22.91 DEG	
D LAT -2.95 DEG	
D LONG -22.70 DEG	

LUNAR CRIBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.3150
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT 51.85 KM
ALT RT 0.0521 KM/SEC
LAT -5°35' DEG
LONG -22.67 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 2.56 DEG
TILT AZIM 61.67 DEG
SWING ANG 221.12 DEG
N.DEV.

PHOTO ILLUMINATION
SUN AZIM 90.13 DEG
INCID ANG 66.43 DEG
EMISS ANG 2.54 DEG
PHASE ANG 68.76 DEG
ALPHA -2.33 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.85 DEG	AB 42.9 KM
A LONG -21.77 DEG	BC 35.4 KM
B LAT -4.17 DEG	CD 42.1 KM
B LONG -22.29 DEG	DA 36.5 KM
C LAT -3.75 DEG	TILT DISTANCE 3.5
C LONG -23.38 DEG	
D LAT -2.44 DEG	
D LONG -22.51 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -3.05 DEG	AB 18.7 KM
A LONG -22.43 DEG	AC 4.7 KM
B LAT -3.63 DEG	CD 18.6 KM
B LONG -22.64 DEG	DA 4.7 KM
C LAT -3.57 DEG	TILT DISTANCE 27.3
C LONG -22.78 DEG	
D LAT -3.00 DEG	
D LONG -22.57 DEG	

MISSION/
FRAME NO.3161
YR, MO, DY
HR, MI, SEC

S/C POSITION
ALT 54.39 KM
ALT RT -0.5680 KM/SEC
LAT 1.63 DEG
LONG -37.91 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 64.69 DEG
TILT AZIM 269.34 DEG
SWING ANG 81.23 DEG
N.DEV.

PHOTO ILLUMINATION
SUN AZIM 91.61 DEG
INCID ANG 84.21 DEG
EMISS ANG 68.81 DEG
PHASE ANG 15.58 DEG
ALPHA 68.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.42 DEG	AB 65.5 KM
A LONG -35.60 DEG	BC 93.5 KM
B LAT -4.37 DEG	CD 243.7 KM
B LONG -40.23 DEG	DA 3C7.1 KM
C LAT -2.45 DEG	TILT DISTANCE 69.4
C LONG -47.92 DEG	
D LAT 6.54 DEG	
D LONG -45.27 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.25 DEG	AB 47.4 KM
A LONG -41.28 DEG	BC 41.8 KM
B LAT 0.78 DEG	CD 62.6 KM
B LONG -41.82 DEG	DA 39.8 KM
C LAT 0.60 DEG	TILT DISTANCE 89.1
C LONG -43.15 DEG	
D LAT 2.46 DEG	
D LONG -42.28 DEG	

PHOTO ILLUMINATION
SUN AZIM 91.58 DEG
INCID ANG 84.21 DEG
EMISS ANG 68.81 DEG
PHASE ANG 15.58 DEG
ALPHA 68.57 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -3.05 DEG	AB 18.7 KM
A LONG -22.43 DEG	AC 4.7 KM
B LAT -3.63 DEG	CD 18.6 KM
B LONG -22.64 DEG	DA 4.7 KM
C LAT -3.57 DEG	TILT DISTANCE 27.3
C LONG -22.78 DEG	
D LAT -3.00 DEG	
D LONG -22.57 DEG	

LUNAR CRATER PHOTOGRAFIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION /
PRAEMISSIO

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT ALT RT -0.0711 KM/SEC	TILT ANG 69.46 DEG TILT AZIM 21.16 DEG SWING ANG 177.48 DEG N.DEV.	SUN AZIM 92.86 DEG INCID ANG 78.75 DEG EMISS ANG 75.20 DEG PHASE ANG 104.44 DEG	LATITUDE 6.91 DEG LONGITUDE -39.13 DEG
LLAT LLAT LONG -43.11 DEG			ALPHA 0.00 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	-12.29 DEG	AB .34.3 KM
A LONG	-3C.76 DEG	BC .3 .J KK
B LAT	2.27 DEG	CD BB.7 KM
B LONG	~3E.65 DEG	DA 16G.1 KW
C LAT	4.C1 DEG	TILT DISTANCE
C LONG	-40.24 DEG	13.7
D LAT	5.97 DEG	
D LONG	-39.91 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	10°55' DEG	AB 2
A LONG	-35°07' DEG	RC
B LAT	4°66' DEG	CD 1
B LONG	-38°84' DEG	DA
C LAT	4°81' DEG	TILT
C LONG	-39°13' DEG	
D LAT	11°41' DEG	
D LONG	-35°78' DEG	

MISSION /
NAME NO.

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	54.480 KN	TILT ANG	17.45 DEG	SUN AZIM	91 - 79 DEG	LATITUDE	1.77 DEG
ALT RT	-0.0599 KN/SEC	TILT AZIM	18.13 DEG	INCID ANG	79 - 33 DEG	LONGITUDE	-42.41 DEG
LAT	1°23 DEG	SWING ANG	176.19 DEG	EMISS ANG	18.02 DEG		
LONG	-42.58 DEG	N.DEV.	337.18 DEG	PHASE ANG	84.80 DEG		
				ALPHA	5.97 DEG		

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER	COORDINATE	SIDE	LEN
A LAT	2°36' DEG	AB	50°.3
A LONG	-41°36' DEG	BC	35°.2
B LAT	0°89' DEG	CD	51°.3
B LONG	-41°13' DEG	DA	46°.1
C LAT	1°32' DEG	TILT DIS	
C LONG	-43°21' DEG		25°.1
D LAT	2°55' DEG		
D LONG	-41°27' DEG		

CORNER	COORDINATE	SIDE	LENGTH
A LAT	2.09 DEG	AB	21.8 KM
A LONG	-42.18 DEG	BC	4.9 KM
B LAT	1.63 DEG	CD	21.8 KM
B LONG	-42.45 DEG	DA	5.5 KM
C LAT	1.49 DEG	TILT	DISTANCE
C LONG	-42.61 DEG		
D LAT	2.16 DEG		
D LONG	-42.35 DEG		

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MISSION/
FRAME NO.

3164 YR, MO, DY 670221 ALT 54.65 KM TILT ANG 17.45 DEG
 HR, MI, SEC 115523.98 ALT RT -0.0586 KM/SEC TILT AZIM 18.61 DEG LAT 1.18 DEG SWING ANG 176.59 DEG
 LONG -42.44 DEG N.DEV. 337.18 DEG EMISS ANG 18.01 DEG
 PHASE ANG 84.80 DEG ALPHA -6.12 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.31 DEG	AB 50.3 KM
A LONG -41.21 DEG	BC 35.1 KM
B LAT 0.84 DEG	CD 51.1 KM
B LONG -41.99 DEG	DA 45.9 KM
C LAT 1.27 DEG	TILT DISTANCE 25.1
C LONG -43.06 DEG	
D LAT 2.89 DEG	
D LONG -42.61 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	2.04 DEG
A LONG	-42.04 DEG
B LAT	1.37 DEG
B LONG	-42.31 DEG
C LAT	1.43 DEG
C LONG	-42.46 DEG
D LAT	2.10 DEG
D LONG	-42.21 DEG

MISSION/
FRAME NO.

3165 YR, MO, DY 670221 ALT 54.51 KM TILT ANG 17.44 DEG
 HR, MI, SEC 115526.43 ALT RT -0.0574 KM/SEC TILT AZIM 19.09 DEG
 LAT 1.13 DEG SWING ANG 177.19 DEG
 LONG -42.30 DEG N.DEV. 337.19 DEG EMISS ANG 18.01 DEG
 PHASE ANG 84.80 DEG ALPHA -6.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.25 DEG	AB 50.2 KM
A LONG -41.07 DEG	BC 35.0 KM
B LAT 0.78 DEG	CD 50.9 KM
B LONG -41.84 DEG	DA 45.8 KM
C LAT 1.21 DEG	TILT DISTANCE 25.1
C LONG -42.92 DEG	
D LAT 2.83 DEG	
D LONG -42.47 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	1.98 DEG
A LONG	-41.89 DEG
B LAT	1.32 DEG
B LONG	-42.17 DEG
C LAT	1.38 DEG
C LONG	-42.32 DEG
D LAT	2.05 DEG
D LONG	-42.06 DEG

PRINCIPAL POINT	
SUN AZIM	91.79 DEG
INCID ANG	79.18 DEG
EMISS ANG	18.01 DEG
PHASE ANG	84.80 DEG
ALPHA	-6.12 DEG

PRINCIPAL POINT	
SUN AZIM	91.78 DEG
INCID ANG	79.03 DEG
EMISS ANG	18.01 DEG
PHASE ANG	84.80 DEG
ALPHA	-6.27 DEG

PRINCIPAL POINT	
SUN AZIM	91.78 DEG
INCID ANG	79.03 DEG
EMISS ANG	18.01 DEG
PHASE ANG	84.80 DEG
ALPHA	-6.27 DEG

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MISSION /

FRAME NO.

TIME

YR. MO. DY

HR. MI. SEC

S/C POSITION
 ALT 54° 37' KM
 ALT RT -0.0561 KM/SEC
 LAT 1° 07' DEG
 LONG -42.16 DEG

S/C ORIENTATION
 TILT ANG 17.44' DEG
 TILT AZIM 19.57' DEG
 SWING ANG 177.68' DEG
 N.DEV. 337.19' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.19 DEG	AB 50.1 KM
A LONG -40.53 DEG	BC 34.9 KM
B LAT 0.73 DEG	CD 50.7 KM
B LONG -41.70 DEG	DA 45.7 KM
C LAT 1.16 DEG	TILT DISTANCE 25.1
C LONG -42.77 DEG	
D LAT 2.77 DEG	
D LONG -42.32 DEG	

S/C POSITION
 ALT 54° 24' KM
 ALT RT -0.0549 KM/SEC
 LAT 1° 02' DEG
 LONG -42.03 DEG

MISSION /
FRAME NO.
3167

TIME

YR. MO. DY

HR. MI. SEC

S/C POSITION
 ALT 50° 3 KM
 ALT RT -0.0549 KM/SEC
 LAT 1° 02' DEG
 LONG -42.03 DEG

S/C ORIENTATION
 TILT ANG 17.43' DEG
 TILT AZIM 20.04' DEG
 SWING ANG 178.18' DEG
 N.DEV. 337.19' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.14 DEG	AB 50.3 KM
A LONG -40.79 DEG	BC 34.8 KM
B LAT 0.68 DEG	CD 50.5 KM
B LONG -41.56 DEG	DA 45.6 KM
C LAT 1.10 DEG	TILT DISTANCE 25.1
C LONG -42.63 DEG	
D LAT 2.71 DEG	
D LONG -42.18 DEG	

S/C POSITION
 ALT 50° 3 KM
 ALT RT -0.0549 KM/SEC
 LAT 1° 02' DEG
 LONG -42.03 DEG

S/C ORIENTATION
 TILT ANG 17.43' DEG
 TILT AZIM 20.04' DEG
 SWING ANG 178.18' DEG
 N.DEV. 337.19' DEG

1

PRINCIPAL POINT

LATITUDE

1.61 DEG

LONGITUDE

-41.58 DEG

PHOTO ILLUMINATION

SUN AZIM

91.78 DEG

INCID ANG

78.89 DEG

EMISS ANG

18.00 DEG

PHASE ANG

84.80 DEG

ALPHA

-6.42 DEG

PRINCIPAL POINT

LATITUDE

1.55 DEG

LONGITUDE

-41.83 DEG

PHOTO ILLUMINATION

SUN AZIM

91.77 DEG

INCID ANG

78.74 DEG

EMISS ANG

18.00 DEG

PHASE ANG

84.80 DEG

ALPHA

-6.56 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 21.6 KM

BC 4.9 KM

CD 21.6 KM

DA 5.5 KM

TILT DISTANCE

91.4

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 21.6 KM

BC 4.9 KM

CD 21.6 KM

DA 5.5 KM

TILT DISTANCE

91.4

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MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

INCID ANG

EMIS ANG

PHASE ANG

ALPHA

ALT

TILT ANG

17.43 DEG

SUN AZIM

91.76 DEG

INCID ANG

78.60 DEG

EMIS ANG

17.99 DEG

PHASE ANG

84.80 DEG

ALPHA

-6.71 DEG

ALT RT

TILT AZIM

20.52 DEG

SWING ANG

178.68 DEG

N.DEV.

337.19 DEG

LAT

TILT ANG

0.97 DEG

SWING ANG

178.68 DEG

N.DEV.

-41.89 DEG

LONG

TILT ANG

-41.89 DEG

SWING ANG

178.68 DEG

N.DEV.

-41.89 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

INCID ANG

EMIS ANG

PHASE ANG

ALPHA

ALT

TILT ANG

17.43 DEG

SUN AZIM

91.76 DEG

INCID ANG

78.60 DEG

EMIS ANG

17.99 DEG

PHASE ANG

84.80 DEG

ALPHA

ALT RT

TILT AZIM

20.52 DEG

SWING ANG

178.68 DEG

N.DEV.

337.19 DEG

LAT

TILT ANG

0.97 DEG

SWING ANG

178.68 DEG

N.DEV.

-41.89 DEG

LONG

TILT ANG

-41.89 DEG

SWING ANG

178.68 DEG

N.DEV.

-41.89 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

INCID ANG

EMIS ANG

PHASE ANG

ALPHA

ALT

TILT ANG

17.43 DEG

SUN AZIM

91.76 DEG

INCID ANG

78.46 DEG

EMIS ANG

17.99 DEG

PHASE ANG

84.80 DEG

ALPHA

ALT RT

TILT AZIM

20.99 DEG

SWING ANG

179.17 DEG

N.DEV.

337.20 DEG

LAT

TILT ANG

0.91 DEG

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

LONG

TILT ANG

25.1

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

INCID ANG

EMIS ANG

PHASE ANG

ALPHA

ALT

TILT ANG

17.43 DEG

SUN AZIM

91.76 DEG

INCID ANG

78.46 DEG

EMIS ANG

17.99 DEG

PHASE ANG

84.80 DEG

ALPHA

ALT RT

TILT AZIM

20.99 DEG

SWING ANG

179.17 DEG

N.DEV.

337.20 DEG

LAT

TILT ANG

0.91 DEG

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

LONG

TILT ANG

25.1

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

INCID ANG

EMIS ANG

PHASE ANG

ALPHA

ALT

TILT ANG

17.43 DEG

SUN AZIM

91.76 DEG

INCID ANG

78.46 DEG

EMIS ANG

17.99 DEG

PHASE ANG

84.80 DEG

ALPHA

ALT RT

TILT AZIM

20.99 DEG

SWING ANG

179.17 DEG

N.DEV.

337.20 DEG

LAT

TILT ANG

0.91 DEG

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

LONG

TILT ANG

25.1

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

INCID ANG

EMIS ANG

PHASE ANG

ALPHA

ALT

TILT ANG

17.43 DEG

SUN AZIM

91.76 DEG

INCID ANG

78.46 DEG

EMIS ANG

17.99 DEG

PHASE ANG

84.80 DEG

ALPHA

ALT RT

TILT AZIM

20.99 DEG

SWING ANG

179.17 DEG

N.DEV.

337.20 DEG

LAT

TILT ANG

0.91 DEG

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

LONG

TILT ANG

25.1

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

INCID ANG

EMIS ANG

PHASE ANG

ALPHA

ALT

TILT ANG

17.43 DEG

SUN AZIM

91.76 DEG

INCID ANG

78.46 DEG

EMIS ANG

17.99 DEG

PHASE ANG

84.80 DEG

ALPHA

ALT RT

TILT AZIM

20.99 DEG

SWING ANG

179.17 DEG

N.DEV.

337.20 DEG

LAT

TILT ANG

0.91 DEG

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

LONG

TILT ANG

25.1

SWING ANG

179.17 DEG

N.DEV.

-41.75 DEG

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

INCID ANG

EMIS ANG

PHASE ANG

ALPHA

ALT

TILT ANG

17.43 DEG

SUN AZIM

91.76 DEG

INCID ANG

78.46 DEG

EMIS ANG

17.99 DEG

PHASE ANG

84.80 DEG

ALPHA

ALT RT

TILT AZIM

20.99 DEG

SWING ANG

179.17 DEG

N.DEV.

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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.TIME
YR. MO. DY
HR. MI. SEC
3170S/C POSITION
ALT 53.85 KM
ALT RT -0.0512 KM/SEC
LAT 0.86 DEG
LONG -61.61 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.97 DEG AB 49.3 KM
A LONG -40.36 DEG BC 34.5 KM
B LAT 0.51 DEG CD 50.0 KM
B LONG -41.13 DEG DA 45.2 KM
C LAT 0.54 DEG TILT DISTANCE
C LONG -42.19 DEG 25.1
D LAT 2.53 DEG
D LONG -41.75 DEGS/C ORIENTATION
TILT ANG 17.43 DEG
TILT AZIM 21.47 DEG
SWING ANG 179.56 DEG
N.DEV. 337.20 DEG
PHASE ANG 84.80 DEG
ALPHA -7.01 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.70 DEG AB 21.4 KM
A LONG -41.18 DEG BC 4.8 KM
B LAT 1.04 DEG CD 21.4 KM
B LONG -41.46 DEG DA 5.4 KM
C LAT 1.10 DEG TILT DISTANCE
C LONG -41.60 DEG 91.04
D LAT 1.76 DEG
D LONG -41.35 DEGPHOTO ILLUMINATION
SUN AZIM 91.75 DEG
INCID ANG 78.31 DEG
EMISS ANG 17.99 DEG
N.DEV. 337.20 DEG
PHASE ANG 84.80 DEG
ALPHA -7.01 DEGMISSION/
FRAME NO.TIME
YR. MO. DY
HR. MI. SEC
3171S/C POSITION
ALT 52.23 KM
ALT RT 0.0385 KM/SEC
LAT -2.98 DEG
LONG -33.48 DEGS/C ORIENTATION
TILT ANG 62.53 DEG
TILT AZIM 255.44 DEG
SWING ANG 20.52 DEG
N.DEV. 296.45 DEG
PHASE ANG 14.83 DEG
ALPHA 38.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.63 DEG AB 65.8 KM
A LONG -34.61 DEG BC 371.5 KM
B LAT -10.43 DEG CD 267.1 KM
B LONG -42.53 DEG DA 51.2 KM
C LAT -2.61 DEG TILT DISTANCE
C LONG -46.24 DEG 53.3
D LAT -2.32 DEG
D LONG -35.68 DEGPHOTO ILLUMINATION
SUN AZIM 90.28 DEG
INCID ANG 71.93 DEG
EMISS ANG 66.05 DEG
N.DEV. 337.20 DEG
PHASE ANG 14.83 DEG
ALPHA 38.35 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -3.49 DEG AB 115.2 KM
A LONG -35.70 DEG BC 35.3 KM
B LAT -5.11 DEG CD 140.7 KM
B LONG -39.15 DEG DA 9.1 KM
C LAT -4.87 DEG TILT DISTANCE
C LONG -40.30 DEG 72.4
D LAT -3.29 DEG
D LONG -35.92 DEGPRINCIPAL POINT
LATITUDE 1.36 DEG
LONGITUDE -41.41 DEG
PRINCIPAL POINT
LATITUDE -3.86 DEG
LONGITUDE -35.97 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

3172

YR. MO. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	670221	ALT 52.26 KM	TILT ANG 66.56 DEG	SUN AZIM 90.92 DEG	LATITUDE ~2.42 DEG
	165812.51	ALT RT -0.0018 KM/SEC	TILT AZIM 255.01 DEG	INCID ANG 77.36 DEG	LONGITUDE -44.07 DEG
		LAT -1.29 DEG	SWING ANG 20.72 DEG	EMISS ANG 70.93 DEG	
		LONG -39.85 DEG	N.DEV. 295.67 DEG	PHASE ANG 16.47 DEG	
				ALPHA - 45.56 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.02 DEG	AB 59.7 KM
A LONG -41.16 DEG	BC 422.0 KM
B LAT -5.70 DEG	CD 197.2 KM
B LONG -50.66 DEG	DA 56.6 KM
C LAT -5.66 DEG	TILT DISTANCE 83.9
C LONG -52.10 DEG	
D LAT -0.61 DEG	
D LONG -42.39 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -1.92 DEG	AB 217.2 KM
A LONG -42.44 DEG	BC 305.7 KM
B LAT -4.80 DEG	CD 292.5 KM
B LONG -49.02 DEG	DA 10.7 KM
C LAT -4.69 DEG	TILT DISTANCE 06.1
C LONG -52.04 DEG	
D LAT -1.69 DEG	
D LONG -42.71 DEG	

MISSION/

FRAME NO.

3173

YR. MO. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	670221	ALT 53.25 KM	TILT ANG 3.54 DEG	SUN AZIM 90.27 DEG	LATITUDE -3.25 DEG
	222758.81	ALT RT 0.0384 KM/SEC	TILT AZIM 189.44 DEG	INCID ANG 58.79 DEG	LONGITUDE -37.27 DEG
		LAT -3.15 DEG	SWING ANG 348.86 DEG	EMISS ANG 3.64 DEG	
		LONG -37.25 DEG	N.DEV. 339.39 DEG	PHASE ANG 68.25 DEG	
				ALPHA 0.49 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.80 DEG	AB 43.9 KM
A LONG -36.46 DEG	BC 37.9 KM
B LAT -4.17 DEG	CD 43.6 KM
B LONG -36.54 DEG	DA 36.0 KM
C LAT -3.72 DEG	TILT DISTANCE 4.8
C LONG -39.11 DEG	
D LAT -2.39 DEG	
D LONG -37.57 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.99 DEG	AB 19.2 KM
A LONG -37.08 DEG	BC 4.9 KM
B LAT -3.58 DEG	CD 19.2 KM
B LONG -37.31 DEG	DA 4.8 KM
C LAT -3.52 DEG	TILT DISTANCE 37.6
C LONG -37.46 DEG	
D LAT -2.93 DEG	
D LONG -37.23 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

3174 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT 53.3° KM SUN AZIM 90.24 DEG LATITUDE -3.30 DEG
 HR. MI. SEC ALT RT 0.0396 KM/SEC TILT AZIM 187.29 DEG LONGITUDE -37.13 DEG
 LAT -3.20 DEG SWING ANG 346.62 DEG EMISS ANG 3.68 DEG
 LONG -37.42 DEG N.DEV. 339.40 DEG PHASE ANG 68.25 DEG
 ALPHA 0.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -2.65 DEG	AB 44.0 KM	A LAT -3.04 DEG	AB 19.3 KM
A LONG -36.32 DEG	BC 38.0 KM	A LONG -36.95 DEG	BC 4.9 KM
B LAT -4.22 DEG	CD 43.6 KM	B LAT -3.63 DEG	CD 19.2 KM
B LONG -36.80 DEG	DA 36.1 KM	B LONG -37.17 DEG	DA 4.8 KM
C LAT -3.78 DEG	TILT DISTANCE 4.8	C LAT -3.58 DEG	TILT DISTANCE
C LONG -37.57 DEG		C LONG -37.32 DEG	
D LAT -2.44 DEG		D LAT -2.98 DEG	
D LONG -37.44 DEG		D LONG -37.09 DEG	

MISSION/
FRAME NO.

3175 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT 53.44 KM SUN AZIM 90.21 DEG LATITUDE -3.36 DEG
 HR. MI. SEC ALT RT 0.0408 KM/SEC TILT AZIM 184.98 DEG LONGITUDE -36.99 DEG
 LAT -3.25 DEG SWING ANG 344.40 DEG EMISS ANG 3.71 DEG
 LONG -36.98 DEG N.DEV. 339.41 DEG PHASE ANG 68.25 DEG
 ALPHA 0.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -2.50 DEG	AB 44.2 KM	A LAT -3.09 DEG	AB 19.3 KM
A LONG -36.18 DEG	BC 38.0 KM	A LONG -36.81 DEG	BC 4.9 KM
B LAT -4.28 DEG	CD 43.7 KM	B LAT -3.69 DEG	CD 19.3 KM
B LONG -36.66 DEG	DA 36.2 KM	B LONG -37.03 DEG	DA 4.8 KM
C LAT -3.83 DEG	TILT DISTANCE 4.9	C LAT -3.63 DEG	TILT DISTANCE
C LONG -37.83 DEG		C LONG -37.18 DEG	
D LAT -2.49 DEG		D LAT -3.03 DEG	
D LONG -37.30 DEG		D LONG -36.96 DEG	

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 90.24 DEG LATITUDE -3.30 DEG
 INCID ANG 68.65 DEG LONGITUDE -37.13 DEG
 EMISS ANG 3.68 DEG
 PHASE ANG 68.25 DEG
 ALPHA 0.35 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 90.21 DEG LATITUDE -3.36 DEG
 INCID ANG 68.51 DEG LONGITUDE -36.99 DEG
 EMISS ANG 3.71 DEG
 PHASE ANG 68.25 DEG
 ALPHA 0.21 DEG

LUNAR CHITTER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

TILT ANG

PHOTO ILLUMINATION

SUN AZIM

INCID ANG

EMISS ANG

PHASE ANG

PRINCIPAL POINT

LATITUDE

LONGITUDE

YR, MO, DY

HR, MI, SEC

KM

KM/SEC

DEG

DEG

DEG

DE

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION

FRAME NO.

3178 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 53°.74° KM SUN AZIM 9°.13° DEG LATITUDE -3°.51° DEG
 HR, MI, SEC ALT RT 0.0444° KM/SEC TILT AZIM 178°.59° DEG INCID ANG 68°.10° DEG LONGITUDE -36°.53° DEG
 LAT -3°.40° DEG SWING ANG 378°.02° DEG EMISS ANG 3°.86° DEG
 LONG -36°.58° DEG N.DEV. 339°.43° DEG PHASE ANG 68°.25° DEG
 ALPHA -2°.21° DEG.

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -3°.25° DEG AB 44.5 KM
 A LONG -35.75° DEG BC 3B.3 KM
 B LAT -4°.44° DEG CD 43.8 KM
 B LONG -36.24° DEG DA 36.4 KM
 C LAT -3°.59° DEG TILT DISTANCE 5.1
 C LONG -37.42° DEG
 D LAT -2°.44° DEG
 D LONG -36.88° DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -3.24° DEG AB 19.4 KM
 A LONG -36.39° DEG BC 4.9 KM
 B LAT -3.84° DEG CD 19.4 KM
 B LONG -35.61° DEG DA 4.6 KM
 C LAT -3.79° DEG TILT DISTANCE
 C LONG -36.77° DEG 39.8
 D LAT -3.19° DEG
 D LONG -36.54° DEG

MISSION

FRAME NO.

3179 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 53°.84° KM SUN AZIM 90°.10° DEG LATITUDE -3°.56° DEG
 HR, MI, SEC ALT RT 0.0456° KM/SEC TILT AZIM 176°.56° DEG INCID ANG 67°.95° DEG LONGITUDE -36°.44° DEG
 LAT -3°.45° DEG SWING ANG 336°.10° DEG EMISS ANG 3°.91° DEG
 LONG -36°.45° DEG N.DEV. 339°.44° DEG PHASE ANG 68°.25° DEG
 ALPHA -0.35° DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -3.10° DEG AB 44.7 KM
 A LONG -35.61° DEG BC 38.3 KM
 B LAT -4°.50° DEG CD 43.9 KM
 B LONG -36.10° DEG DA 36.5 KM
 C LAT -4°.04° DEG TILT DISTANCE 5.1
 C LONG -37.28° DEG
 D LAT -2°.69° DEG
 D LONG -36.74° DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -3.29° DEG AB 19.5 KM
 A LONG -36.25° DEG BC 4.9 KM
 B LAT -3.90° DEG CD 19.4 KM
 B LONG -36.48° DEG DA 4.8 KM
 C LAT -3.84° DEG TILT DISTANCE
 C LONG -36.63° DEG 40.4
 D LAT -3.24° DEG
 D LONG -36.40° DEG

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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
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MISSION/
FRAME NO.

3180 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
YR, MO, DY ALT 53.95 KM TILT ANG 3.86 DEG SUN AZIM 90.07 DEG LATITUDE -3.52 DEG
HR, MIN, SEC ALT RT 0.0468 KM/SEC TILT AZIM 174.60 DEG INCID ANG 67.82 DEG LONGITUDE -36.33 DEG
LAT -3.50 DEG SWING ANG 334.04 DEG EMISS ANG 3.98 DEG
LONG -36.31 DEG N.DEV. 339.45 DEG PHASE ANG 68.25 DEG
- ALPHA -0.49 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -3.16 DEG	AB 4.4.8 KM	A LAT -3.35 DEG	AB 19.5 KM
A LONG -35.47 DEG	BC 38.4 KM	A LONG -36.11 DEG	BC 4.9 KM
B LAT -4.55 DEG	CD 43.9 KM	B LAT -3.95 DEG	CD 19.5 KM
B LONG -35.96 DEG	DA 36.5 KM	B LONG -36.34 DEG	DA 4.8 KM
C LAT -4.09 DEG	TILT DISTANCE	C LAT -3.89 DEG	TIILT DISTANCE
C LONG -37.14 DEG	5.2	C LONG -36.49 DEG	41.0
D LAT -2.75 DEG		D LAT -3.29 DEG	
D LONG -36.60 DEG		D LONG -36.26 DEG	

MISSION/
FRAME NO.

3181 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
YR, MO, DY ALT 53.39 KM TILT ANG 18.96 DEG SUN AZIM 90.82 DEG LATITUDE -2.22 DEG
HR, MIN, SEC 015514.11 ALT RT 0.0013 KM/SEC TILT AZIM 200.32 DEG INCID ANG 73.27 DEG LONGITUDE -43.50 DEG
LAT -1.65 DEG SWING ANG 359.64 DEG EMISS ANG 19.57 DEG
LONG -43.28 DEG N.DEV. 338.17 DEG PHASE ANG 67.77 DEG
- ALPHA 4.50 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -1.76 DEG	AB 50.6 KM	A LAT -1.94 DEG	AB 21.7 KM
A LONG -42.71 DEG	BC 45.9 KM	A LONG -43.30 DEG	BC 5.5 KM
B LAT -3.38 DEG	CD 50.6 KM	B LAT -2.61 DEG	CD 21.7 KM
B LONG -43.12 DEG	DA 24.2 KM	B LONG -43.55 DEG	DA 4.8 KM
C LAT -2.85 DEG	TILT DISTANCE	C LAT -2.55 DEG	TIILT DISTANCE
C LONG -44.54 DEG	27.3	C LONG -43.71 DEG	09.4
D LAT -1.36 DEG		D LAT -1.88 DEG	
D LONG -43.77 DEG		D LONG -43.45 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -3.35 DEG	AB 19.5 KM	A LAT -3.35 DEG	AB 19.5 KM
A LONG -36.11 DEG	BC 4.9 KM	B LAT -3.95 DEG	CD 19.5 KM
B LAT -3.95 DEG	CD 19.5 KM	B LONG -36.34 DEG	DA 4.8 KM
B LONG -36.34 DEG	DA 4.8 KM	C LAT -3.89 DEG	TIILT DISTANCE
C LAT -3.89 DEG	TIILT DISTANCE	C LONG -43.71 DEG	09.4
D LAT -3.29 DEG		D LAT -1.88 DEG	
D LONG -36.26 DEG		D LONG -43.45 DEG	

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MISSION/V

FRAME NO.

3182
YR. MO. DY
HR. MI. SECTIME
670222
015516.51S/C POSITION
ALT 53°.39 KM
ALT RT 0.0026 KM/SEC
LAT -1°.70 DEG
LONG -43.15 DEGS/C ORIENTATION
TILT ANG 18.97 DEG
TILT AZIM 199.89 DEG
SWING ANG 359.18 DEG
NDEV. 338.17 DEGPHOTO ILLUMINATION
SUN AZIM 90.80 DEG
INCID ANG 73.13 DEG
EMISS ANG 19.57 DEG
PHASE ANG 67.77 DEG
ALPHA 4.34 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

A LAT -1.81 DEG
A LONG -42.57 DEG
B LAT -3.44 DEG
B LONG -42.98 DEG
C LAT -2.90 DEG
C LONG -44.39 DEG
D LAT -1.42 DEG
D LONG -43.63 DEGSIDE LENGTH
AB 50.6 KM
BC 45.9 KM
CD 50.5 KM
DA 34.2 KM
TILT DISTANCE
27.3PHOTO ILLUMINATION
SUN AZIM 90.80 DEG
INCID ANG 73.13 DEG
EMISS ANG 19.57 DEG
PHASE ANG 67.77 DEG
ALPHA 4.34 DEG

HIGH RESOLUTION

CORNER COORDINATE

A LAT -1.99 DEG
A LONG -43.16 DEG
B LAT. -2.66 DEG
B LONG -43.40 DEG
C LAT -2.60 DEG
C LONG -43.57 DEG
D LAT -1.93 DEG
D LONG -43.31 DEGSIDE LENGTH
AB 21.7 KM
BC 5.5 KM
CD 21.7 KM
DA 4.8 KM
TILT DISTANCE
09.4PHOTO ILLUMINATION
SUN AZIM 90.78 DEG
INCID ANG 72.99 DEG
EMISS ANG 19.58 DEG
PHASE ANG. 67.77 DEG
ALPHA 4.19 DEG

MISSION/V

FRAME NO.

3183
YR. MO. DY
HR. MI. SECTIME
670222
015518.91S/C POSITION
ALT 53°.40 KM
ALT RT 0.0038 KM/SEC
LAT -1°.76 DEG
LONG -43.01 DEGS/C ORIENTATION
TILT ANG 18.97 DEG
TILT AZIM 199.46 DEG
SWING ANG 358.73 DEG
NDEV. 338.17 DEGPHOTO ILLUMINATION
SUN AZIM 90.78 DEG
INCID ANG 72.99 DEG
EMISS ANG 19.58 DEG
PHASE ANG. 67.77 DEG
ALPHA 4.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

A LAT -1.87 DEG
A LONG -42.43 DEG
B LAT -3.49 DEG
B LONG -42.83 DEG
C LAT -2.55 DEG
C LONG -44.25 DEG
D LAT -1.47 DEG
D LONG -43.49 DEGSIDE LENGTH
AB 50.7 KM
BC 45.9 KM
CD 50.5 KM
DA 34.2 KM
TILT DISTANCE
27.3PHOTO ILLUMINATION
SUN AZIM 90.78 DEG
INCID ANG 72.99 DEG
EMISS ANG 19.58 DEG
PHASE ANG. 67.77 DEG
ALPHA 4.19 DEG

HIGH RESOLUTION

CORNER COORDINATE

A LAT -2.04 DEG
A LONG -43.02 DEG
B LAT -2.72 DEG
B LONG -43.26 DEG
C LAT -2.65 DEG
C LONG -43.43 DEG
D LAT -1.99 DEG
D LONG -43.17 DEGSIDE LENGTH
AB 21.7 KM
BC 5.5 KM
CD 21.7 KM
DA 4.8 KM
TILT DISTANCE
09.5PHOTO ILLUMINATION
SUN AZIM 90.78 DEG
INCID ANG 72.99 DEG
EMISS ANG 19.58 DEG
PHASE ANG. 67.77 DEG
ALPHA 4.19 DEG

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MISSION,
FRAME NO.

MEDIUM	RESOLUTION	SIDE	LEADER
CORNER	COORDINATE		
A	LAT	-1.92 DEG	AB 50.
A	LONG	-42.29 DEG	BC 45.
B	LAT	-3.55 DEG	CD 50.
B	LONG	-42.69 DEG	DA 34.
C	LAT	-3.00 DEG	TILT DI
C	LONG	-44.11 DEG	27.
D	LAT	-1.52 DEG	
D	LONG	-43.34 DEG	

HIGH RESOLUTION		SID
CORNER	COORDINATE	
A LAT	-2.10 DEG	AB
A LONG	-42.88 DEG	BC
B LAT	-2.77 DEG	CD
B LONG	-43.12 DEG	DA
C LAT	-2.71 DEG	TIL
C LONG	-43.29 DEG	
D LAT	-2.04 DEG	
D LONG	-43.03 DEG	

SOLUTION		SIDE LENGTH
G	G	AB 21.7 KH
G	G	BC 5.5 KH
G	G	CD 21.7 KH
G	G	DA 4.8 KH
		TIILT DISTANCE
		09.5

MISSION

LINE NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
1	YR, MO, DY	670222	ALT 54.00 KH	TILT ANG 12.68 DEG	SUN AZIM 90.78 DEG
2	HR, MIN, SEC	0523:3.02	ALT RT 0.0071 KH/SEC	TILT AZIM 201.02 DEG	LATITUDE -2.30 DEG
3	LAT	-1.93 DEG	SWING ANG 1.07 DEG	INCID ANG 72.69 DEG	LONGITUDE -44.67 DEG
4	LONG	-44.52 DEG	N.DEV. 336.71 DEG	EWISS ANG 13.09 DEG	PHASE ANG 68.44 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A	LAT -1°45' DEG	AB 47°
A	LONG -43°28' DEG	BC 42°
B	LAT -3°34' DEG	CD 47°
B	LONG -44°31' DEG	DA 35°
C	LAT -2°45' DEG	TILT DIA 17°
C	LONG -45°53' DEG	
D	LAT -1°44' DEG	
D	LONG -44°95' DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	-72-02 DEG	AB 20.5 KM
A LONG	-44-48 DEG	BC 5.2 KM
B LAT	-72-66 DEG	CD 20.5 KM
B LONG	-44-72 DEG	DA 4.8 KM
C LAT	-72-60 .DEG	TI LT DISTANC E
C LONG	-44-88 DEG	37.2
D LAT	-71-97 DEG	
D LONG	-44-63 DEG	

SUN AZIM	90.-78 DEG	LATITUDE	-22.30 DEG
INCID ANG	72.-59 DEG	LONGITUDE	-44.67 DEG
EWISS ANG	13.09 DEG		
PHASE ANG	68.-44 DEG		
ALPHA	72.30 DEG		

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MISSION /

FRAME NO.

3186
YR.MD.DY
HR.MI.SEC

TIME
670222
052355.40

S/C POSITION
ALT 54.02 KM
ALT RT 0.0083 KM/SEC
LAT -1.98 DEG
LONG -44.39 DEG

S/C ORIENTATION
TILT ANG 12.68 DEG
TILT AZIM 201.17 DEG
SWING ANG 0.40 DEG
N.DEV. 338.71 DEG

PHOTO ILLUMINATION
SUN AZIM 90.75 DEG
INCID ANG 72.55 DEG
EMISS ANG 13.708 DEG
PHASE ANG 68.44 DEG
ALPHA 3.67 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -1.90 DEG	AB 47.1 KM
A LONG -43.74 DEG	BC 42.4 KM
B LAT -3.39 DEG	CD 47.2 KM
B LONG -44.17 DEG	DA 35.0 KM
C LAT -2.90 DEG	TILT DISTANCE 17.8
C LONG -45.49 DEG	
D LAT -1.49 DEG	
D LONG -44.62 DEG	

PHOTO ILLUMINATION
SUN AZIM 90.75 DEG
INCID ANG 72.55 DEG
EMISS ANG 13.708 DEG
PHASE ANG 68.44 DEG
ALPHA 3.67 DEG

MISSION /

FRAME NO.

3187
YR.MD.DY
HR.MI.SEC

TIME
670222
052357.79

S/C POSITION
ALT 54.04 KM
ALT RT 0.0096 KM/SEC
LAT -2.03 DEG
LONG -44.25 DEG

S/C ORIENTATION
TILT ANG 12.68 DEG
TILT AZIM 200.52 DEG
SWING ANG 359.74 DEG
N.DEV. 338.72 DEG

PHOTO ILLUMINATION
SUN AZIM 90.73 DEG
INCID ANG 72.41 DEG
EMISS ANG 13.08 DEG
PHASE ANG 68.44 DEG
ALPHA 3.52 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -1.95 DEG	AB 47.1 KM
A LONG -43.60 DEG	BC 42.4 KM
B LAT -3.45 DEG	CD 47.1 KM
B LONG -44.03 DEG	DA 35.1 KM
C LAT -2.95 DEG	TILT DISTANCE 17.8
C LONG -45.34 DEG	
D LAT -1.54 DEG	
D LONG -44.68 DEG	

PHOTO ILLUMINATION
SUN AZIM 90.73 DEG
INCID ANG 72.41 DEG
EMISS ANG 13.08 DEG
PHASE ANG 68.44 DEG
ALPHA 3.52 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.08 DEG	AB 20.5 KM
A LONG -44.34 DEG	BC 5.2 KM
B LAT -2.71 DEG	CD 29.5 KM
B LONG -44.58 DEG	DA 4.8 KM
C LAT -2.65 DEG	TILT DISTANCE 37.1
C LONG -44.74 DEG	
D LAT -2.02 DEG	
D LONG -44.49 DEG	

PHOTO ILLUMINATION
SUN AZIM 90.73 DEG
INCID ANG 72.41 DEG
EMISS ANG 13.08 DEG
PHASE ANG 68.44 DEG
ALPHA 3.52 DEG

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MISSION/ FRAME NO.		TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT LAT LONG	S/C ORIENTATION TILT ANG SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE
3188		670222 0524 0.117	54.06 KM 0.0108 KM/SEC -2.08 DEG -44.11 DEG	12.68 DEG TILT AZIM 199.86 DEG SWING ANG 359.07 DEG N.DEV. 338.72 DEG	90.71 DEG 72.27 DEG 13.08 DEG 68.44 DEG 3.37 DEG	-2.46 DEG -44.25 DEG
MEDIUM RESOLUTION						
			CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
			A LAT -2.01 DEG	AB 47.2 KM	CORNER COORDINATE	SIDE LENGTH
			A LONG -43.45 DEG	BC 42.4 KM	A LAT -2.18 DEG	AB 20.5 KM
			B LAT -3.50 DEG	CD 47.1 KM	A LONG -44.06 DEG	BC 5.2 KM
			B LONG -43.89 DEG	DA 35.1 KM	B LAT -2.82 DEG	CD 20.5 KM
			C LAT -3.00 DEG	TILT DISTANCE 17.8	B LONG -44.29 DEG	DA 4.8 KM
			C LONG -45.20 DEG		C LAT -2.76 DEG	TIILT DISTANCE
			D LAT -1.60 DEG		C LONG -44.46 DEG	37.1
			D LONG -44.54 DEG		D LAT -2.13 DEG	
					D LONG -44.21 DEG	
MISSION/ FRAME NO.						
3189		670222 0524 2.56	54.09 KM 0.0120 KM/SEC -2.13 DEG -43.98 DEG	12.69 DEG TILT AZIM 199.21 DEG SWING ANG 358.41 DEG N.DEV. 338.72 DEG	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT LATITUDE LONGITUDE
MEDIUM RESOLUTION						
			CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
			A LAT -2.06 DEG	AB 47.3 KM	CORNER COORDINATE	SIDE LENGTH
			A LONG -43.31 DEG	BC 42.5 KM	A LAT -2.24 DEG	AB 20.5 KM
			B LAT -3.56 DEG	CD 47.1 KM	A LONG -43.92 DEG	BC 5.2 KM
			B LONG -43.75 DEG	DA 35.1 KM	B LAT -2.87 DEG	CD 20.5 KM
			C LAT -3.06 DEG	TILT DISTANCE 17.8	B LONG -44.15 DEG	DA 4.8 KM
			C LONG -45.06 DEG		C LAT -2.61 DEG	TIILT DISTANCE
			D LAT -1.65 DEG		C LONG -44.31 DEG	37.2
			D LONG -44.40 DEG		D LAT -2.18 DEG	
					D LONG -44.07 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA,
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MISSION/ FRAME NO. 3190 TIME 670222 S/C POSITION ALT 54.12 KM TILT ANG 12.69 DEG

YR. MO. DY 0524 4.95 ALT RT 0.0132 KM/SEC TILT AZIM 198.55 DEG
HR. MI. SEC LAT -2.18 DEG SWING ANG 357.74 DEG
LONG -43.84 DEG N.DEV. 338.72 DEG
PHASE ANG 68.44 DEG
ALPHA 3.07 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.11 DEG	AB 47.3 KM
A LONG -43.17 DEG	BC 42.5 KM
B LAT -3.61 DEG	CD 47.1 KM
B LONG -43.61 DEG	DA 35.1 KM
C LAT -3.11 DEG	TILT DISTANCE
C LONG -44.92 DEG	17.8
D LAT -1.70 DEG	
D LONG -44.25 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.29 DEG	AB 20.5 KM
A LONG -43.78 DEG	BC 5.2 KM
B LAT -2.92 DEG	CD 29.5 KM
B LONG -44.01 DEG	DA 4.8 KM
C LAT -2.86 DEG	TILT DISTANCE
C LONG -44.17 DEG	37.2
D LAT -2.23 DEG	
D LONG -43.93 DEG	

MISSION/ FRAME NO. 3191 TIME 670222 S/C POSITION ALT 54.15 KM TILT ANG 12.70 DEG

YR. MO. DY 0524 7.33 ALT RT 0.0144 KM/SEC TILT AZIM 197.90 DEG
HR. MI. SEC LAT -2.23 DEG SWING ANG 357.08 DEG
LONG -43.70 DEG N.DEV. 338.72 DEG
PHASE ANG 68.44 DEG
ALPHA 2.92 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.17 DEG	AB 47.4 KM
A LONG -43.03 DEG	BC 42.5 KM
B LAT -3.67 DEG	CD 47.1 KM
B LONG -43.47 DEG	DA 35.1 KM
C LAT -3.16 DEG	TILT DISTANCE
C LONG -44.78 DEG	17.9
D LAT -1.76 DEG	
D LONG -44.11 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.34 DEG	AB 20.6 KM
A LONG -43.64 DEG	BC 5.2 KM
B LAT -2.98 DEG	CD 20.5 KM
B LONG -43.87 DEG	DA 4.8 KM
C LAT -2.92 DEG	TILT DISTANCE
C LONG -44.03 DEG	37.3
D LAT -2.28 DEG	
D LONG -43.79 DEG	

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MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT					
3192	YR. MO. DY HR. MI. SEC	670222 0224 9.72	ALT RT LAT LONG	54.19 KM 0.0157 KM/SEC -2.28 DEG -43.57 DEG	TILT ANG TILT AZIM SWING ANG N.DEV.	12.70 DEG 197.25 DEG 356.41 DEG 338.73 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG.	90.62 DEG 71.71 DEG 13.11 DEG 68.44 DEG	LATITUDE LONGITUDE	-2.67 DEG -43.69 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION			
A LAT -E 22 DEG	AB 47.5 KM	A LAT -2.39 DEG	PHOTO ILLUMINATION	PRINCIPAL POINT	
A LONG -42.68 DEG	BC 42.5 KM	A LONG -43.50 DEG	SUN AZIM 90.59 DEG	LATITUDE AB 20.6 KM	
B LAT -5.72 DEG	CD 47.1 KM	B LAT -3.03 DEG	INCID ANG 71.56 DEG	LONGITUDE BC 5.2 KM	
B LONG -43.22 DEG	DA 35.2 KM	B LONG -43.73 DEG	EMISS ANG 13.12 DEG	CD 20.5 KM	
C LAT -3.21 DEG	TILT DISTANCE -7.9	C LAT -2.97 DEG	PHASE ANG 68.44 DEG	DA 4.8 KM	
C LONG -42.63 DEG		C LONG -43.89 DEG	ALPHA 2.63 DEG	TILT DISTANCE 37.4	
D LAT -1.81 DEG		D LAT -2.34 DEG			
D LONG -42.57 DEG		D LONG -43.65 DEG			

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT					
3193	YR. MO. DY HR. MI. SEC	670222. 022412.10	ALT RT LAT LONG	54.23 KM 0.0169 KM/SEC -2.34 DEG -43.43 DEG	TILT ANG TILT AZIM SWING ANG N.DEV.	12.71 DEG 196.60 DEG 355.75 DEG 338.73 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG	90.59 DEG 71.56 DEG 13.12 DEG 68.44 DEG	LATITUDE LONGITUDE	-2.72 DEG -43.55 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION			
A LAT -2.27 DEG	AB 47.5 KM	A LAT -2.44 DEG	PHOTO ILLUMINATION	PRINCIPAL POINT	
A LONG -42.74 DEG	BC 42.5 KM	A LONG -43.36 DEG	SUN AZIM 90.59 DEG	LATITUDE AB 20.6 KM	
B LAT -3.78 DEG	CD 47.0 KM	B LAT -3.09 DEG	INCID ANG 71.56 DEG	LONGITUDE BC 5.2 KM	
B LONG -43.18 DEG	DA 35.2 KM	B LONG -43.59 DEG	EMISS ANG 13.12 DEG	CD 20.5 KM	
C LAT -2.27 DEG..	TILT DISTANCE 17.9	C LAT -3.02 DEG	PHASE ANG 68.44 DEG	DA 4.8 KM	
C LONG -44.49 DEG		C LONG -43.75 DEG	ALPHA 2.63 DEG	TILT DISTANCE 37.5	
D LAT -1.86 DEG		D LAT -2.39 DEG			
D LONG -43.63 DEG		D LONG -43.51 DEG			

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MISSION/
FRAME NO.3194
YR. MO. DY
HR. MI. SEC

TIME 67C223
S/C POSITION ALT 54.27 KM
ALT RT 0.0181 KM/SEC
LAT -2.39 DEG
LONG -43.29 DEG

S/C ORIENTATION TILT ANG 12.72 DEG
TILT AZIM 105.95 DEG
SWING ANG 355.09 DEG
N.DEV. 338.73 DEG
PHASE ANG 68.44 DEG
ALPHA 2.49 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.32 DEG AB 47.7 KM
A LONG -42.60 DEG BC 42.5 KM
B LAT -3.64 DEG CD 47.9 KM
B LONG -43.04 DEG DA 35.2 KM
C LAT -3.32 DEG TILT DISTANCE 17.9
C LONG -44.55 DEG
D LAT -1.62 DEG
D LONG -43.69 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.50 DEG AB 20.6 KM
A LONG -43.22 DEG BC 5.3 KM
B LAT -3.14 DEG CD 27.6 KM
B LONG -43.45 DEG DA 4.8 KM
C LAT -3.08 DEG TILT DISTANCE 37.6
C LONG -43.61 DEG
D LAT -2.44 DEG
D LONG -43.36 DEG

MISSION/
FRAME NO.3195
YR. MO. DY
HR. MI. SEC

TIME 67C222
S/C POSITION ALT 54.31 KM
ALT RT 0.0193 KM/SEC
LAT -2.44 DEG
LONG -43.16 DEG

S/C ORIENTATION TILT ANG 12.74 DEG
TILT AZIM 195.30 DEG
SWING ANG 354.43 DEG
N.DEV. 338.74 DEG
PHASE ANG 68.44 DEG
ALPHA 2.33 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.38 DEG AB 47.8 KM
A LONG -42.46 DEG BC 42.7 KM
B LAT -3.69 DEG CD 47.0 KM
B LONG -42.50 DEG DA 35.2 KM
C LAT -3.37 DEG TILT DISTANCE 17.9
C LONG -44.21 DEG
D LAT -1.97 DEG
D LONG -43.55 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -2.55 DEG AB 29.6 KM
A LONG -43.97 DEG BC 5.3 KM
B LAT -3.19 DEG CD 29.6 KM
B LONG -43.31 DEG DA 4.8 KM
C LAT -3.13 DEG TILT DISTANCE 37.7
C LONG -43.47 DEG
D LAT -2.51 DEG
D LONG -43.42 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 90.57 DEG LATITUDE -3.79 DEG
INCID ANG 71.42 DEG LONGITUDE -43.41 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 90.54 DEG LATITUDE -2.83 DEG
INCID ANG 71.28 DEG LONGITUDE -43.26 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 90.54 DEG LATITUDE -2.83 DEG
INCID ANG 71.28 DEG LONGITUDE -43.26 DEG

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MISSION/
FRAME NO.

3196 YR. MO. DY 670222 S/C POSITION ALT 54.36 KM TILT ANG 12.75 DEG PRINCIPAL POINT
 HR. MI. SEC 05219.26 ALT RT 0.0205 KM/SEC TILT AZIM 194.65 DEG SUN AZIM 90.52 DEG LATITUDE -2.88 DEG
 LAT -2.49 DEG SWING ANG 353.77 CEG INCID ANG 71.13 DEG LONGITUDE -43.12 DEG
 LONG -43.02 DEG N.DEV. 338.74 DEG EMISS ANG 13.16 DEG
 N.DEV. - 2.18 DEG PHASE ANG 68.44 DEG
 ALPHA 2.18 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.43 DEG	AB 47.9 KM
A LONG -62.32 DEG	BC 42.7 KM
B LAT -3.55 DEG	CD 47.0 KM
B LONG -42.76 DEG	DA 35.3 KM
C LAT -3.43 DEG	TILT DISTANCE 17.9
C LONG -44.07 DEG	
D LAT -2.02 DEG	
D LONG -43.41 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	-2.61 DEG
A LONG	-42.93 DEG
B LAT	-3.25 DEG
B LONG	-43.17 DEG
C LAT	-3.18 DEG
C LONG	-43.33 DEG
D LAT	-2.55 DEG
D LONG	-43.08 DEG

MISSION/
FRAME NO.

3197 YR. MO. DY 670222 S/C POSITION ALT 56.41 KM TILT ANG 12.77 DEG PRINCIPAL POINT
 HR. MI. SEC 052421.65 ALT RT 0.0218 KM/SEC TILT AZIM 194.00 DEG SUN AZIM 90.49 DEG LATITUDE -2.94 DEG
 LAT -2.54 DEG SWING ANG 353.11 CEG INCID ANG 70.99 DEG LONGITUDE -42.98 DEG
 LONG -42.88 DEG N.DEV. 338.74 DEG EMISS ANG 13.17 DEG
 N.DEV. - 2.03 DEG PHASE ANG 68.44 DEG
 ALPHA 2.03 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.48 DEG	AB 48.0 KM
A LONG -42.17 DEG	BC 42.8 KM
B LAT -4.00 DEG	CD 47.0 KM
B LONG -42.61 DEG	DA 35.3 KM
C LAT -3.48 DEG	TILT DISTANCE 17.9
C LONG -43.93 DEG	
D LAT -2.07 DEG	
D LONG -43.27 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT	-2.65 DEG
A LONG	-42.79 DEG
B LAT	-3.30 DEG
B LONG	-43.03 DEG
C LAT	-3.24 DEG
C LONG	-43.19 DEG
D LAT	-2.60 DEG
D LONG	-42.94 DEG

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MISSION/
FRAME NO.3198
YR, MO, DY
HR, MI, SECTIME
670222
052424.03S/C POSITION
ALT 54.47 KM
ALT RT 0.0230 KM/SECS/C ORIENTATION
TILT ANG 12.78 DEG
TILT AZIM 193.36 DEGPHOTO ILLUMINATION
SUN AZIM 90.47 DEG
INCID ANG 70.85 DEG
SWING ANG 352.46 DEG
N.DEV. 338.75 DEG
PHASE ANG 68.44 DEG
ALPHA 1.488 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.53 DEG	AB 48.1 KM
A LONG -42.93 DEG	BC 42.8 KM
B LAT -4.06 DEG	CD 47.0 KM
B LONG -42.47 DEG	DA 35.4 KM
C LAT -3.53 DEG	TILT DISTANCE 18.0
C LONG -43.79 DEG	
D LAT -2.13 DEG	
D LONG -43.13 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.71 DEG	AB 20.7 KM
A LONG -42.65 DEG	BC 5.3 KM
B LAT -3.35 DEG	CD 20.6 KM
B LONG -42.89 DEG	DA 4.9 KM
C LAT -3.29 DEG	TILT DISTANCE 38.3
C LONG -43.05 DEG	
D LAT -2.66 DEG	
D LONG -42.80 DEG	

MISSION/
FRAME NO.3199
YR, MO, DY
HR, MI, SECTIME
670222
052426.42S/C POSITION
ALT 54.52 KM
ALT RT 0.0242 KM/SECS/C ORIENTATION
TILT ANG 12.80 DEG
TILT AZIM 192.71 DEGPHOTO ILLUMINATION
SUN AZIM 90.44 DEG
INCID ANG 70.71 DEG
SWING ANG 351.81 DEG
N.DEV. 338.75 DEG
PHASE ANG 68.44 DEG
ALPHA 1.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.77 DEG	AB 20.7 KM
A LONG -42.51 DEG	BC 5.3 KM
B LAT -3.41 DEG	CD 20.7 KM
B LONG -42.75 DEG	DA 4.9 KM
C LAT -3.34 DEG	TILT DISTANCE 38.5
C LONG -42.91 DEG	
D LAT -2.71 DEG	
D LONG -42.66 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.77 DEG	AB 20.7 KM
A LONG -42.51 DEG	BC 5.3 KM
B LAT -3.41 DEG	CD 20.7 KM
B LONG -42.75 DEG	DA 4.9 KM
C LAT -3.34 DEG	TILT DISTANCE 38.3
C LONG -42.91 DEG	
D LAT -2.71 DEG	
D LONG -42.66 DEG	

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MISSION/

FRAME NO.

YR, MO, DY

HR, MIN, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT. 54.58 KM 0.02535 KM/SEC	TILT ANG 12.82 DEG TILT AZIM 192.07 DEG	SUN AZIM 90.42 DEG INCID ANG 70.57 DEG	LATITUDE -3.10 DEG LONGITUDE -42.56 DEG
LAT -2.69 DEG LONG -42.48 DEG	SWING ANG 351.16 DEG N.DEV. 338.76 DEG	EMISS ANG 13.23 DEG PHASE ANG 68.44 DEG	
		ALPHA 1.58 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.64 DEG A LONG -41.75 DEG	AB 4.83 KM BC 42.9 KM
B LAT -4.17 DEG B LONG -42.15 DEG	CD 47.0 KM DA 35.5 KM
C LAT -3.64 DEG C LONG -43.50 DEG	TILT DISTANCE 18.0
D LAT -2.23 DEG D LONG -42.84 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.82 DEG A LONG -42.37 DEG	AB 20.7 KM BC 5.3 KM
B LAT -3.46 DEG B LONG -42.61 DEG	CD 20.7 KM DA 4.9 KM
C LAT -3.40 DEG C LONG -42.77 DEG	TILT DISTANCE 38.7
D LAT -2.76 DEG D LONG -42.52 DEG	

MISSION/

FRAME NO.

YR, MO, DY

HR, MIN, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 55.61 KM 0.0335 KM/SEC	TILT ANG 4.58 DEG TILT AZIM 190.19 DEG	SUN AZIM 90.33 DEG INCID ANG 69.72 DEG	LATITUDE -3.21 DEG LONGITUDE -43.47 DEG
LAT -3.07 DEG LONG -43.45 DEG	SWING ANG 349.56 DEG N.DEV. 339.33 DEG	EMISS ANG 4.73 DEG PHASE ANG 68.08 DEG	
		ALPHA 0.67 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.74 DEG A LONG -42.63 DEG	AB 46.1 KM BC 46.0 KM
B LAT -4.18 DEG B LONG -42.12 DEG	CD 45.6 KM DA 37.4 KM
C LAT -3.71 DEG C LONG -44.36 DEG	TILT DISTANCE 64.3
D LAT -2.31 DEG D LONG -43.79 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -2.93 DEG A LONG -43.28 DEG	AB 20.1 KM BC 5.1 KM
B LAT -3.56 DEG B LONG -43.51 DEG	CD 20.1 KM DA 5.0 KM
C LAT -3.50 DEG C LONG -43.67 DEG	TILT DISTANCE 48.8
D LAT -2.88 DEG D LONG -43.43 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 55.69 KM
ALT RT 0.0347 KM/SEC
LAT -3.12 DEG
LONG -43.31 DEGS/C ORIENTATION
TILT ANG 4.61 DEG
TILT AZIM 188.45 DEG
SWING ANG 347.82 DEG
N.DEV. 339.34 DEGPHOTO ILLUMINATION
SUN AZIM 90.30 DEG
INCID ANG 59.58 DEG
EMISS ANG 4.76 DEG
PHASE ANG 68.98 DEG
ALPHA. 2.53 DEGMISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 55.77 KM
ALT RT 0.0359 KM/SEC
LAT -3.17 DEG
LONG -43.18 DEGS/C ORIENTATION
TILT ANG 4.64 DEG
TILT AZIM 186.70 DEG
SWING ANG 346.07 DEG
N.DEV. 339.35 DEGPHOTO ILLUMINATION
SUN AZIM 90.28 DEG
INCID ANG 59.44 DEG
EMISS ANG 4.79 DEG
PHASE ANG 68.98 DEG
ALPHA 0.39 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 4.6.2 KM

BC 4.0.3 KM

CD 4.5.7 KM

DA 37.5 KM

TILT DISTANCE 6.3

D LAT -2.36 DEG

D LONG -43.65 DEG

D LONG -43.30 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 20.2 KM

BC 5.1 KM

CD 20.1 KM

DA 5.0 KM

TILT DISTANCE 49.1

C LONG -4.3.53 DEG

D LAT -2.53 DEG

D LONG -43.30 DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 20.2 KM

BC 5.1 KM

CD 20.1 KM

DA 5.0 KM

TILT DISTANCE 49.4

C LONG -4.3.39 DEG

D LAT -2.98 DEG

D LONG -43.16 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 20.2 KM

BC 5.1 KM

CD 20.2 KM

DA 5.3 KM

TILT DISTANCE 49.4

C LONG -4.3.39 DEG

D LAT -2.98 DEG

D LONG -43.16 DEG

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MISSION/
FRAME NO.
3204

TIME
670222
YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 55.86 KM	TILT ANG 4.68 DEG	SUN AZIM 90.25 DEG	LATITUDE -3.37 DEG
ALT RT 0.0371 KM/SEC	TILT AZIM 184.93 DEG	INCID ANG 69.30 DEG	LONGITUDE -43.05 DEG
LAT -43.22 DEG	SWING ANG 344.30 DEG	EMISS ANG 4.83 DEG	
LONG -43.04 DEG	N.DEV. 339.35 DEG	PHASE ANG 58.98 DEG	
		ALPHA 0.24 DEG	

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -2.90 DEG AB 46.4 KM
A LONG -42.20 DEG BC 40.2 KM
B LAT -4.35 DEG CD 45.7 KM
B LONG -42.70 DEG DA 37.5 KM
C LAT -3.87 DEG TILT DISTANCE 6.4
C LONG -43.94 DEG
D LAT -2.47 DEG
D LONG -43.37 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.09 DEG AB 20.2 KM
A LONG -42.86 DEG BC 5.1 KM
B LAT -3.72 DEG CD 20.2 KM
B LONG -43.09 DEG DA 5.0 KM
C LAT -3.66 DEG TILT DISTANCE 49.8
C LONG -43.25 DEG
D LAT -3.03 DEG
D LONG -43.01 DEG

MISSION/
FRAME NO.
3205

TIME
670222
YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 56.25 KM	TILT ANG 29.83 DEG	SUN AZIM 90.70 DEG	LATITUDE -2.16 DEG
ALT RT 0.0347 KM/SEC	TILT AZIM 21.96 DEG	INCID ANG 69.29 DEG	LONGITUDE -44.79 DEG
LAT -3.15 DEG	SWING ANG 180.92 DEG	EMISS ANG 30.90 DEG	
LONG -45.19 DEG	N.DEV. 335.77 DEG	PHASE ANG 82.57 DEG	
		ALPHA -15.92 DEG	

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.21 DEG AB 68.2 KM
A LONG -43.35 DEG BC 36.3 KM
B LAT -3.14 DEG CD 67.6 KM
B LONG -44.52 DEG DA 60.3 KM
C LAT -2.70 DEG TILT DISTANCE 45.8
C LONG -45.64 DEG
D LAT -0.51 DEG
D LONG -45.22 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.72 DEG AB 27.7 KM
A LONG -44.50 DEG BC 5.3 KM
B LAT -2.57 DEG CD 27.6 KM
B LONG -44.85 DEG DA 6.6 KM
C LAT -2.50 DEG TILT DISTANCE 49.6
C LONG -45.02 DEG
D LAT -1.64 DEG
D LONG -44.71 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.09 DEG AB 20.2 KM
A LONG -42.86 DEG BC 5.1 KM
B LAT -3.72 DEG CD 20.2 KM
B LONG -43.09 DEG DA 5.0 KM
C LAT -3.66 DEG TILT DISTANCE 49.8
C LONG -43.25 DEG
D LAT -3.03 DEG
D LONG -43.01 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.09 DEG AB 20.2 KM
A LONG -42.86 DEG BC 5.1 KM
B LAT -3.72 DEG CD 20.2 KM
B LONG -43.09 DEG DA 5.0 KM
C LAT -3.66 DEG TILT DISTANCE 49.8
C LONG -43.25 DEG
D LAT -3.03 DEG
D LONG -43.01 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.09 DEG AB 20.2 KM
A LONG -42.86 DEG BC 5.1 KM
B LAT -3.72 DEG CD 20.2 KM
B LONG -43.09 DEG DA 5.0 KM
C LAT -3.66 DEG TILT DISTANCE 49.8
C LONG -43.25 DEG
D LAT -3.03 DEG
D LONG -43.01 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.09 DEG AB 20.2 KM
A LONG -42.86 DEG BC 5.1 KM
B LAT -3.72 DEG CD 20.2 KM
B LONG -43.09 DEG DA 5.0 KM
C LAT -3.66 DEG TILT DISTANCE 49.8
C LONG -43.25 DEG
D LAT -3.03 DEG
D LONG -43.01 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.09 DEG AB 20.2 KM
A LONG -42.86 DEG BC 5.1 KM
B LAT -3.72 DEG CD 20.2 KM
B LONG -43.09 DEG DA 5.0 KM
C LAT -3.66 DEG TILT DISTANCE 49.8
C LONG -43.25 DEG
D LAT -3.03 DEG
D LONG -43.01 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -3.09 DEG AB 20.2 KM
A LONG -42.86 DEG BC 5.1 KM
B LAT -3.72 DEG CD 20.2 KM
B LONG -43.09 DEG DA 5.0 KM
C LAT -3.66 DEG TILT DISTANCE 49.8
C LONG -43.25 DEG
D LAT -3.03 DEG
D LONG -43.01 DEG

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MISSION/
FRAME NO.3206
YR, MO, DY
HR, MI, SEC

TIME 670222 S/C POSITION 56.35 KM
ALT RT 0.0361 KM/SEC TILT ANG 29.84 DEG
LAT -3.21 DEG SWING ANG 181.26 DEG
LONG -45.03 DEG N.DEV. .335.79 DEG
PHASE ANG 82.57 DEG
ALPHA -16.09 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.26 DEG AB 68.5 KM
A LONG -43.18 DEG BC 36.4 KM
B LAT -3.20 DEG CD 57.6 KM
B LONG -44.35 DEG DA 60.4 KM
C LAT -2.77 DEG TILT DISTANCE 45.8
C LONG -45.47 DEG
D LAT -3.57 DEG
D LONG -45.05 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.78 DEG AB 27.7 KM
A LONG -44.34 DEG BC 5.3 KM
B LAT -2.63 DEG CD 27.7 KM
B LONG -44.69 DEG DA 6.6 KM
C LAT -2.56 DEG TILT DISTANCE 49.6
C LONG -44.85 DEG
D LAT. -1.70 DEG
D LONG -44.54 DEG

MISSION/
FRAME NO.3207
YR, MO, DY
HR, MI, SEC

TIME 670222 S/C POSITION 56.45 KM
ALT RT 0.0376 KM/SEC TILT ANG 29.84 DEG
LAT -3.27 DEG SWING ANG 181.60 DEG
LONG -44.87 DEG N.DEV. .335.81 DEG
PHASE ANG 82.57 DEG
ALPHA -16.26 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.32 DEG AB 68.7 KM
A LONG -43.00 DEG BC 36.4 KM
B LAT -3.26 DEG CD 67.5 KM
B LONG -44.18 DEG DA 60.5 KM
C LAT -2.83 DEG TILT DISTANCE 45.9
C LONG -45.31 DEG
D LAT -0.64 DEG
D LONG -44.88 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -1.84 DEG AB 27.8 KM
A LONG -44.17 DEG BC 5.3 KM
B LAT -2.69 DEG CD 27.7 KM
B LONG -44.52 DEG DA 6.6 KM
C LAT -2.62 DEG TILT DISTANCE 49.7
C LONG -44.69 DEG
D LAT -1.76 DEG
D LONG -44.38 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 90.67 DEG LATITUDE -2.22 DEG
INCID ANG 69.12 DEG LONGITUDE -44.62 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 90.65 DEG LATITUDE -2.28 DEG
INCID ANG 68.96 DEG LONGITUDE -44.46 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 90.62 DEG LATITUDE -2.30 DEG
INCID ANG 68.92 DEG LONGITUDE -44.54 DEG

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MISSION /

FRAME NO.
3208
YR, MO, DY
122150, 64
HR, MIN, SEC

TIME
670222
S/C POSITION
ALT 56.56 KM
AL1 RT 0.0390 KM/SEC
LAT -3.33 DEG
LONG -44.71 DEG
N.DEV. 335.83 DEG
PHOTO ILLUMINATION
S/C ORIENTATION
TILT ANG 29.85 DEG
TILT AZIM 22.83 DEG
SWING ANG 181.95 DEG
EMISS ANG 30.93 DEG
PHASE ANG 82.67 DEG
ALPHA -16.43 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.37 DEG AB 69.3 KM
A LONG -42.83 DEG BC 36.5 KM
B LAT -3.32 DEG CD 67.7 KM
B LONG -44.01 DEG DA 63.7 KM
C LAT -2.89 DEG TILT DISTANCE
C LONG -46.14 DEG 45.9
D LAT -0.76 DEG
D LONG -44.72 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.90 DEG AB 27.9 KM
A LONG -44.00 DEG BC 5.4 KM
B LAT -2.75 DEG CD 27.8 KM
B LONG -44.36 DEG DA 6.6 KM
C LAT -2.68 DEG TILT DISTANCE
C LONG -44.52 DEG 49.8
D LAT -1.82 DEG
D LONG -44.21 DEG

MISSION /

FRAME NO.
3209
YR, MO, DY
122153, 47
HR, MIN, SEC

TIME
670222
S/C POSITION
ALT 56.67 KM
AL1 RT 0.0404 KM/SEC
LAT -3.39 DEG
LONG -44.55 DEG
N.DEV. 335.86 DEG
PHOTO ILLUMINATION
S/C ORIENTATION
TILT ANG 29.86 DEG
TILT AZIM 23.12 DEG
SWING ANG 182.30 DEG
EMISS ANG 30.94 DEG
PHASE ANG 82.57 DEG
ALPHA -16.63 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.43 DEG AB 69.3 KM
A LONG -42.66 DEG BC 36.5 KM
B LAT -3.38 DEG CD 67.7 KM
B LONG -43.85 DEG DA 60.8 KM
C LAT -2.55 DEG TILT DISTANCE
C LONG -44.58 DEG 45.9
D LAT -0.76 DEG
D LONG -44.55 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -1.96 DEG AB 27.9 KM
A LONG -43.83 DEG BC 5.4 KM
B LAT -2.81 DEG CD 27.8 KM
B LONG -44.19 DEG DA 6.7 KM
C LAT -2.75 DEG TILT DISTANCE
C LONG -44.35 DEG 49.9
D LAT -1.88 DEG
D LONG -44.04 DEG

PRINCIPAL POINT
LATITUDE -2.34 DEG
LONGITUDE -44.29 DEG

PRINCIPAL POINT
LATITUDE -2.49 DEG
LONGITUDE -44.12 DEG

PRINCIPAL POINT
LATITUDE -2.49 DEG
LONGITUDE -44.12 DEG

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MISSION/

FRAME NO.

3212 YR, MO, DY

HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	57°.03 KM	TILT ANG	SUN AZIM 90°.49 DEG	LATITUDE -2°.58 DEG	
ALT RT	0.0448 KM/SEC	TILT AZIM 23°.99 DEG	INCID ANG 58°.11 DEG	LONGITUDE -43°.62 DEG	
LAT	-3°.57 DEG	SWING ANG 183°.34 DEG	EMISS ANG 30°.97 DEG		
LONG	-44°.06 DEG	N.DEV.	PHASE ANG 82°.57 DEG		
		335°.93 DEG	ALPHA -17°.12 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -1°.59 DEG	AB 70°.2 KM	CORNER COORDINATE SIDE LENGTH
A LONG -42°.13 DEG	BC 36°.9 KM	A LAT -2°.13 DEG AB 28.1 KM
B LAT -3°.57 DEG	CD 67°.8 KM	A LONG -43°.33 DEG BC 5°.4 KM
B LONG -43°.33 DEG	DA 61°.3 KM	B LAT -2°.99 DEG CD 28.0 KM
C LAT -2°.14 DEG	TILT DISTANCE 4.5°	B LONG -43°.68 DEG DA 6°.7 KM
C LONG -44°.47 DEG		C LAT -2°.93 DEG TILT DISTANCE SD.3
D LAT -0°.54 DEG		C LONG -43°.85 DEG
D LONG -44°.05 DEG		D LAT -2°.06 DEG
		D LONG -43°.54 DEG

MISSION/

FRAME NO.

3213 YR, MO, DY

HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	58°.98 KM	TILT ANG 66°.49 DEG	SUN AZIM 90°.99 DEG	LATITUDE -3°.33 DEG	
ALT RT	-0.0631 KM/SEC	TILT AZIM 200°.92 DEG	INCID ANG 62°.51 DEG	LONGITUDE -59°.78 DEG	
LAT	1.31 DEG	SWING ANG 1°.81 DEG	EMISS ANG 71°.46 DEG		
LONG	-58°.00 DEG	N.DEV.	PHASE ANG 68°.76 DEG		
		311°.52 DEG	ALPHA -2°.92 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -0°.76 DEG	AB 87.0 KM	CORNER COORDINATE SIDE LENGTH
A LONG -57°.89 DEG	BC 234°.1 KM	A LAT -1°.57 DEG AB 110.6 KM
B LAT -8°.19 DEG	CD 254°.9 KM	A LONG -58°.95 DEG BC 411°.9 KM
B LONG -58°.18 DEG	DA 53°.7 KM	B LAT -11°.29 DEG CD 323°.0 KM
C LAT -8°.04 DEG	TILT DISTANCE 83.9	B LONG -62°.14 DEG DA 9°.9 KM
C LONG -65°.59 DEG		C LAT -13°.47 DEG TILT DISTANCE 01.0
D LAT -C°.20 DEG		C LONG -63°.57 DEG
D LONG -59°.57 DEG		D LAT -1°.47 DEG
		D LONG -59°.26 DEG

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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.
3214
YR, MO, DY
HR, MI, SEC
670222
2243 A.11

TIME
ALT RT -0.0888 KM/SEC
LAT 1.90 DEG
LONG -64.41 DEG

S/C POSITION
ALT 63.49 KM
TILT ANG 65.66 DEG
TILT AZIM 92.19 DEG
SWING ANG 168.66 DEG
EMISS ANG 70.80 DEG
PHASE ANG 86.18 DEG
N.DEV. 347.89 DEG
ALPHA -14.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 14.88 DEG AB 338.7 KM
A LONG -56.13 DEG BC 60.2 KM
B LAT 3.73 DEG CD 103.9 KM
B LONG -63.74 DEG DA 188.7 KM
C LAT 4.25 DEG TILT DISTANCE
C LONG -65.66 DEG 77.0
D LAT 10.62 DEG
D LONG -67.43 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 15.39 DEG AB 312.9 KM
A LONG -63.25 DEG BC 31.1 KM
B LAT 5.04 DEG CD 119.5 KM
B LONG -64.36 DEG DA 105.1 KM
C LAT 5.17 DEG TILT DISTANCE
C LONG -64.70 DEG 47.3
D LAT 15.73 DEG
D LONG -64.55 DEG

MISSION/

FRAME NO.
3215
YR, MO, DY
HR, MI, SEC
670223
021123.81

TIME
ALT RT -0.0889 KM/SEC
LAT 2.01 DEG
LONG -66.66 DEG

S/C POSITION
ALT 64.60 KM
TILT ANG 1.12 DEG
TILT AZIM 273.89 DEG
SWING ANG 73.21 DEG
N.DEV. 339.32 DEG
ALPHA 1.16 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.57 DEG AB 52.5 KM
A LONG -65.71 DEG BC 44.9 KM
B LAT 0.54 DEG CD 53.3 KM
B LONG -66.32 DEG DA -44.7 KM
C LAT 1.45 DEG TILT DISTANCE
C LONG -67.71 DEG 1.6
D LAT 3.10 DEG
D LONG -67.08 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 2.34 DEG AB 23.2 KM
A LONG -66.48 DEG BC 5.8 KM
B LAT 1.62 DEG CD 23.2 KM
B LONG -66.75 DEG DA 5.8 KM
C LAT 1.69 DEG TILT DISTANCE
C LONG -66.93 DEG 11.8
D LAT 2.41 DEG
D LONG -66.66 DEG

PHOTO ILLUMINATION
SUN AZIM 92.19 DEG
INCID ANG 83.91 DEG
EMISS ANG 70.80 DEG
PHASE ANG 86.18 DEG
ALPHA -14.40 DEG

PRINCIPAL POINT
LATITUDE 7.05 DEG
LONGITUDE -64.39 DEG

PHOTO ILLUMINATION
SUN AZIM 91.62 DEG
INCID ANG 84.30 DEG
EMISS ANG 1.16 DEG
PHASE ANG 83.14 DEG
ALPHA 1.16 DEG

PRINCIPAL POINT
LATITUDE 2.02 DEG
LONGITUDE -56.70 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

4005

YR. MO. DY

154617.81

HR. MI. SEC

TIME S/C POSITION
 ALT 3512.53 KM TILT ANG 2.35 DEG
 ALT RT -9.2452 KM/SEC TILT AZIM 100.48 DEG
 LAT -71.23 DEG SWING ANG 267.49 DEG
 LONG .76.27 DEG N.DEV. 1.44 DEG
 PHASE ANG 87.93 DEG
 ALPHA -6.56 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -37.42 DEG	AB 175.4 KM
A LONG. 21.11 DEG	BC 277.1 KM
B LAT -41.23 DEG	CD 866.9 KM
B LONG 10.34 DEG	DA 861.9 KM
C LAT -26.91 DEG	TILT DISTANCE 3.3
C LONG -24.32 DEG	
D LAT -8.79 DEG	
D LONG 34.11 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -49.49 DEG	AB 321.3 KM
A LONG 99.73 DEG	BC 332.9 KM
B LAT -82.34 DEG	CD 303.7 KM
B LONG -149.15 DEG	DA 333.7 KM
C LAT -84.30 DEG	TILT DISTANCE 25.2
C LONG -39.02 DEG	
D LAT -49.13 DEG	
D LONG 82.97 DEG	

MISSION/

FRAME NO.

4006

YR. MO. DY

154627.91

HR. MI. SEC

TIME S/C POSITION
 ALT 3510.05 KM TILT ANG 2.38 DEG
 ALT RT -0.2450 KM/SEC TILT AZIM 97.53 DEG
 LAT -71.13 DEG SWING ANG 264.82 DEG
 LONG 76.36 DEG N.DEV. 1.41 DEG
 PHASE ANG 87.93 DEG
 ALPHA -6.72 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -37.29 DEG	AB 170.8 KM
A LONG 21.50 DEG	BC 276.8 KM
B LAT -41.22 DEG	CD 842.2 KM
B LONG 10.82 DEG	DA 841.2 KM
C LAT -27.66 DEG	TILT DISTANCE 3.3
C LONG -22.72 DEG	
D LAT -5.30 DEG	
D LONG 34.26 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -48.11 DEG	AB 320.5 KM
A LONG 99.71 DEG	BC 332.2 KM
B LAT -82.56 DEG	CD 302.9 KM
B LONG -151.79 DEG	DA 333.9 KM
C LAT -84.55 DEG	TILT DISTANCE 25.3
C LONG -35.75 DEG	
D LAT -48.76 DEG	
D LONG 83.06 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -49.49 DEG	AB 321.3 KM
A LONG 99.73 DEG	BC 332.9 KM
B LAT -82.34 DEG	CD 303.7 KM
B LONG -149.15 DEG	DA 333.7 KM
C LAT -84.30 DEG	TILT DISTANCE 25.2
C LONG -39.02 DEG	
D LAT -49.13 DEG	
D LONG 82.97 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -48.11 DEG	AB 320.5 KM
A LONG 99.71 DEG	BC 332.2 KM
B LAT -82.56 DEG	CD 302.9 KM
B LONG -151.79 DEG	DA 333.9 KM
C LAT -84.55 DEG	TILT DISTANCE 25.3
C LONG -35.75 DEG	
D LAT -48.76 DEG	
D LONG 83.06 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

4037 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670511 ALT 3507.55 KM TILT ANG 2.40 DEG SUN AZIM 61.91 DEG LATITUDE -70.81 DEG
 HR, MI, SEC 154636.11 ALT RT -0.2449 KM/SEC TILT AZIM 94.79 DEG INCID ANG 81.36 DEG LONGITUDE 91.34 DEG
 LAT -71.02 DEG SWING ANG 2.62.16 DEG EMISS ANG 7.25 DEG
 LONG 76.45 DEG N.DEV. 1.38 DEG PHASE ANG 87.92 DEG
 ALPHA -6.88 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -37.16 DEG AB 1.66.2 KM
 A LONG 21.89 DEG BC 276.7 KM
 B LAT -41.21 DEG CD 820.5 KM
 B LONG 11.31 DEG DA 824.4 KM
 C LAT -28.32 DEG TILT DISTANCE 3.3
 C LONG -23.44 DEG
 D LAT -9.70 DEG
 D LONG 34.39 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -47.73 DEG AB 319.8 KM
 A LONG 99.66 DEG BC 331.5 KM
 B LAT -82.76 DEG CD 302.2 KM
 B LONG -84.59 DEG DA 334.2 KM
 C LAT -84.78 DEG TILT DISTANCE 25.5
 C LONG -32.15 DEG
 D LAT -48.39 DEG
 D LONG 83.15 DEG

MISSION/
FRAME NO.

4038 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670511 ALT 3505.08 KM TILT ANG 2.42 DEG SUN AZIM 61.94 DEG LATITUDE -70.49 DEG
 HR, MI, SEC 154648.21 ALT RT -0.2447 KM/SEC TILT AZIM 92.11 DEG INCID ANG 80.89 DEG LONGITUDE 91.35 DEG
 LAT -70.91 DEG SWING ANG 259.57 DEG EMISS ANG 7.32 DEG
 LONG 76.54 DEG N.DEV. 1.36 DEG PHASE ANG -87.93 DEG
 ALPHA -7.04 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -37.02 DEG AB 1.65.8 KM
 A LONG 22.27 DEG BC 276.5 KM
 B LAT -41.20 DEG CD 891.7 KM
 B LONG 11.79 DEG DA 894.6 KM
 C LAT -26.21 DEG TILT DISTANCE 3.3
 C LONG -24.68 DEG
 D LAT -7.25 DEG
 D LONG 34.09 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -47.34 DEG AB 319.1 KM
 A LONG 99.66 DEG BC 330.9 KM
 B LAT -82.94 DEG CD 301.5 KM
 B LONG -157.50 DEG DA 334.4 KM
 C LAT -84.99 DEG TILT DISTANCE 25.8
 C LONG -28.30 DEG
 D LAT -48.01 DEG
 D LONG 83.24 DEG

29

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 61.91 DEG LATITUDE -70.81 DEG
 INCID ANG 81.36 DEG LONGITUDE 91.34 DEG
 EMISS ANG 7.25 DEG
 PHASE ANG 87.92 DEG
 ALPHA -6.88 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 61.94 DEG LATITUDE -70.49 DEG
 INCID ANG 80.89 DEG LONGITUDE 91.35 DEG
 EMISS ANG 7.32 DEG
 PHASE ANG -87.93 DEG
 ALPHA -7.04 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORT DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSISSIPPI

FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4009	YR, MO, DY 670511 HR, MIN, SEC	ALT 2989.15 KM ALT RT -0.1752 KM/SEC LAT -42°.02 DEG LONG 86°28' DEG	TILT ANG 4°25' DEG TILT AZIM 91°57' DEG SWING ANG 288°62' DEG TR4DEV. -	SUN AZIM 65°08' DEG INCID ANG 65°23' DEG EMISS ANG 11°63' DEG PHASE ANG 23°58' DEG	LATITUDE -41°79' DEG LONGITUDE 96°20' DEG ALPHA -11°04' DEG

MEDIUM RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	
A LAT	-42°44' DEG	AB 330.0	
A LONG	45°58' DEG	BC 222.8	
B LAT	-49°54' DEG	CD 034°7'	
B LONG	43°02' DEG	DA 927.8	
C LAT	-62°99' DEG	TILT DIST.	
C LONG	-32°89' DEG	5.9	
D LAT	-7°21' DEG		
D LONG	41°18' DEG		

HIGH-RESOLUTION					
CORNER	COORDINATE	S1	AB	CD	DA
A LAT	-22° 69' DEG				
A LONG	93° 46' DEG				
B LAT	-55° 44' DEG				
B LONG	119° 53' DEG				
C LAT	-60° 57' DEG				
C LONG	104° 14' DEG				
D LAT	-26° 10' DEG				
D LONG	83° 90' DEG				

HIGH-RESOLUTION			
CORNER:	COORDINATE	SIDE LENGTH	
A LAT	-22°.69 DEG	AB .131 .1	KM
A LONG	93°.46 DEG	BC .291 .9	KM
B LAT	-55°.44 DEG	CD .108 .2	KM
B LONG	119°.53 DEG	DA .283 .0	KM
C LAT	-60°.67 DEG	TILT DISTANCE	
C LONG	104°.14 DEG	45 .3	
D LAT	-26°.10 DEG		
D LONG	83°.90 DEG		

SECTION V

THE NO.	TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		YR, MO, DY	HR, MIN, SEC	ALT	KM	TILT ANG	DEG	SUN AZIM	DEG
1	670511	162448.11	2.987-37	KM/SEC	4-26	65-25	DEG	-41-42	DEG
		ALT RT	-0.1748		TILT AZIM	89-70	DEG	65-07	DEG
		LAT.	-41-88	DEG	SWING ANG	286-76	DEG	EMISS ANG	11-67 DEG
		LONG	86-30	DEG	N.DEV.	23-59	DEG	PHASE ANG	76-22
								ALPHA	-11-19 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A	LAT -42.15 DEG	AB 325.
A	LONG 46.217 DEG	BC 222.
B	LAT -49.25 DEG	CD 044.
B	LONG 43.55 DEG	DA 935.
C	LAT +63.73 DEG	TILT DI
C	LONG -31.68 DEG	5.
D	LAT +6.69 DEG	
D	LONG 41.19 DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	-22° 27' DEG	AB 129.9 KM
A LONG	93° 49' DEG	BC 291.5 KM
B LAT	-55.06 DEG	CD 106.9 KM
B LONG	119° 20' DEG	DA 283.4 KM
C LAT	-60.25' DEG	TILT DISTANCE 45.5
C LONG	103° 96' DEG	
D LAT	-25.71 DEG	
D LONG	83.95 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

4011 YR, MO, DY

HR, MI, SEC

TIME

670511

ALT RT

~0.1743 KM/SEC

S/C POSITION

2985.60 KM

TILT ANG

4.28 DEG

SUN AZIM

65.41 DEG

INCID ANG

64.92 DEG

LATITUDE

-41.04 DEG

LONGITUDE

96.19 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

284.94 DEG

EMISS ANG

11.71 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.33 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

670511

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

4.30 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

1627 8.31

ALT RT

~0.1739 KM/SEC

S/C POSITION

2983.85 KM

TILT ANG

86.05 DEG

SUN AZIM

65.57 DEG

INCID ANG

64.77 DEG

LATITUDE

-40.67 DEG

LONGITUDE

96.18 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SWING ANG

283.13 DEG

EMISS ANG

11.77 DEG

PHASE ANG

76.22 DEG

ALPHA

-11.48 DEG

MISSION/
FRAME NO.

4012 YR, MO, DY

HR, MI, SEC

TIME

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MISSION/

FRAME NO.
4013
YR, MO, DY
HR, MI, SEC

TIME
670511
165647.31

S/C POSITION
ALT 2748.23 KM
ALT RT -0.0677 KM/SEC
LAT -14.42 DEG
LONG 89.21 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 0.43 DEG
TILT AZIM 36.59 DEG
SWING ANG 221.73 DEG
N.DEV.

PHOTO ILLUMINATION
SUN AZIM 82.29 DEG
INCID ANG 62.72 DEG
EMISS ANG 1.10 DEG
PHASE ANG 63.50 DEG
ALPHA -0.78 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 20.64 DEG	AB 476.7 KM
A LONG 135.09 DEG	BC 349.0 KM
E LAT -28.70 DEG	CD 994.8 KM
B LONG 145.45 DEG	DA 404.5 KM
C LAT -42.91 DEG	TILT DISTANCE 0.6
C LONG 23.40 DEG	
D LAT 11.60 DEG	
D LONG 43.21 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	3.57 DEG
A LONG	92.33 DEG
B LAT	-30.22 DEG
B LONG	96.27 DEG
C LAT	-31.07 DEG
C LONG	86.56 DEG
D LAT	2.79 DEG
D LONG	83.91 DEG

MISSION/

FRAME NO.
4014
YR, MO, DY
HR, MI, SEC

TIME
670511
165657.51

S/C POSITION
ALT 2747.54 KM
ALT RT -0.0671 KM/SEC
LAT -14.27 DEG
LONG 89.22 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 0.56 DEG
TILT AZIM 28.42 DEG
SWING ANG 213.56 DEG
N.DEV.

PHOTO ILLUMINATION
SUN AZIM 82.48 DEG
INCID ANG 62.64 DEG
EMISS ANG 1.46 DEG
PHASE ANG 63.50 DEG
ALPHA -0.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 21.66 DEG	AB 486.6 KM
A LONG 136.16 DEG	BC 338.1 KM
B LAT -28.30 DEG	CD 057.2 KM
B LONG 144.88 DEG	DA 421.9 KM
C LAT -43.40 DEG	TILT DISTANCE 0.7
C LONG 20.74 DEG	
D LAT 12.15 DEG	
D LONG 42.56 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	4.01 DEG
A LONG	92.37 DEG
B LAT	-29.79 DEG
B LONG	96.27 DEG
C LAT	-30.63 DEG
C LONG	86.62 DEG
D LAT	3.23 DEG
D LONG	83.94 DEG

PRINCIPAL POINT
LATITUDE -13.87 DEG
LONGITUDE 89.63 DEG

PRINCIPAL POINT
LATITUDE -13.48 DEG
LONGITUDE 89.66 DEG

PRINCIPAL POINT
LATITUDE -13.48 DEG
LONGITUDE 89.66 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.4015
YR. MO. DY
HR. MI. SECTIME
670511
1655 7.61

S/C POSITION
 ALT 2746.87 KM
 ALT RT -0.0654 KM/SEC
 LAT -14.11 DEG
 LONG 89.23 DEG
 N.DEV.

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 22.81 DEG AB 498.8 KM
 A LONG 137.47 DEG BC 327.9 KM
 B LAT -27.90 DEG CD 924.6 KM
 B LONG 144.35 DEG DA 442.7 KM
 C LAT -43.35 DEG TILT DISTANCE 0.9
 C LONG 22.35 DEG
 D LAT 12.71 DEG
 D LONG 42.68 DEG

S/C ORIENTATION
 TILT ANG 0.71 DEG
 TILT AZIM 23.53 DEG
 SWING ANG 208.67 DEG
 N.DEV. 5.24 DEG
 ALPHA -0.99 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 4.44 DEG AB 015.3 KM
 A LONG 92.41 DEG BC 253.2 KM
 B LAT -29.36 DEG CD 013.8 KM
 B LONG 95.27 DEG DA 256.1 KM
 C LAT -30.20 DEG TILT DISTANCE 7.5
 C LONG 86.68 DEG
 D LAT 3.66 DEG
 D LONG 83.97 DEG

MISSION/
FRAME NO.4016
YR. MO. DY
HR. MI. SECTIME
670511
165917.71

S/C POSITION
 ALT 2746.20 KM
 ALT RT -0.0658 KM/SEC
 LAT -13.96 DEG
 LONG 89.25 DEG
 N.DEV.

S/C ORIENTATION
 TILT ANG 0.85 DEG
 TILT AZIM 20.29 DEG
 SWING ANG 205.43 DEG
 N.DEV. 5.24 DEG
 ALPHA -1.04 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 24.23 DEG AB 519.8 KM
 A LONG 139.27 DEG BC 318.3 KM
 B LAT -27.50 DEG CD 996.1 KM
 B LONG 143.64 DEG DA 470.1 KM
 C LAT -43.27 DEG TILT DISTANCE 1.1
 C LONG 23.76 DEG
 D LAT 13.28 DEG
 D LONG 42.38 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 4.88 DEG AB 015.6 KM
 A LONG 92.45 DEG BC 252.9 KM
 B LAT -28.93 DEG CD 013.9 KM
 B LONG 96.27 DEG DA 256.4 KM
 C LAT -29.77 DEG TILT DISTANCE 9.0
 C LONG 86.73 DEG
 D LAT 4.09 DEG
 D LONG 83.99 DEG

PHOTO ILLUMINATION
 SUN AZIM 82.57 DEG
 INCID ANG 62.35 DEG
 EMIS ANG 1.82 DEG
 PHASE ANG 63.50 DEG
 ALPHA -0.99 DEG

PHOTO ILLUMINATION
 SUN AZIM 82.86 DEG
 INCID ANG 62.47 DEG
 EMIS ANG 2.20 DEG
 PHASE ANG 63.50 DEG
 ALPHA -1.04 DEG

PHOTO ILLUMINATION
 SUN AZIM 82.86 DEG
 INCID ANG 62.47 DEG
 EMIS ANG 2.20 DEG
 PHASE ANG 63.50 DEG
 ALPHA -1.04 DEG

PHOTO ILLUMINATION
 SUN AZIM 82.57 DEG
 INCID ANG 62.35 DEG
 EMIS ANG 1.82 DEG
 PHASE ANG 63.50 DEG
 ALPHA -0.99 DEG

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MISSION/

FRAME NO.

4017

YR, MO, DY

172956.61

TIME 670511 ALT RT 0.0583 KM/SEC

LAT 13.89 DEG SWING ANG 103.92 DEG

LONG 91.45 DEG N.DEV. 354.17 DEG

S/C POSITION ALT 2739.11 KM TILT ANG 0.66 DEG

TILT AZIM 290.01 DEG INCID ANG 61.55 DEG

SWING ANG 103.92 DEG EMISS ANG 1.70 DEG

PHASE ANG 59.89 DEG

ALPHA 1.66 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 34.33 DEG AB 865.0 KM

A LONG 159.26 DEG BC 014.8 KM

B LAT -29.76 DEG CD 505.1 KM

B LONG 139.38 DEG DA 405.9 KM

C LAT -11.77 DEG TILT DISTANCE Q.9

C LONG 39.51 DEG

D LAT 38.71 DEG

D LONG 29.68 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 30.57 DEG AB 009.6 KM

A LONG 97.18 DEG BC 253.6 KM

B LAT -2.98 DEG CD 012.5 KM

B LONG 92.83 DEG DA 254.4 KM

C LAT -2.20 DEG TILT DISTANCE 7.0

C LONG 84.48 DEG

D LAT 31.59 DEG

D LONG 87.44 DEG

MISSION/

FRAME NO.

4018

YR, MO, DY

1730 6.71

TIME 670511 ALT RT 0.0589 KM/SEC

LAT 14.04 DEG TILT AZIM 301.92 DEG

LONG 91.46 DEG SWING ANG 115.83 DEG

N.DEV. 354.17 DEG

S/C POSITION ALT 2739.70 KM TILT ANG 0.71 DEG

TILT AZIM 301.92 DEG INCID ANG 61.57 DEG

SWING ANG 115.83 DEG EMISS ANG 1.84 DEG

PHASE ANG 59.89 DEG

ALPHA 1.68 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 34.36 DEG AB 856.7 KM

A LONG 159.66 DEG BC 014.0 KM

B LAT -29.66 DEG CD 513.9 KM

B LONG 139.26 DEG DA 428.9 KM

C LAT -11.07 DEG TILT DISTANCE 1.0

C LONG 40.61 DEG

D LAT 39.21 DEG

D LONG 27.70 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 31.01 DEG AB 010.0 KM

A LONG 97.25 DEG BC 253.4 KM

B LAT -2.55 DEG CD 012.9 KM

B LONG 92.87 DEG DA 254.8 KM

C LAT -1.78 DEG TILT DISTANCE 7.6

C LONG 84.53 DEG

D LAT 32.03 DEG

D LONG 87.45 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SUN AZIM 97.72 DEG LATITUDE 14.63 DEG

INCID ANG 61.57 DEG LONGITUDE 90.47 DEG

EMISS ANG 1.84 DEG

PHASE ANG 59.89 DEG

ALPHA 1.68 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SUN AZIM 97.72 DEG LATITUDE 14.63 DEG

INCID ANG 61.57 DEG LONGITUDE 90.47 DEG

EMISS ANG 1.84 DEG

PHASE ANG 59.89 DEG

ALPHA 1.68 DEG

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MISSION /

FRAME NO.

4019
YR, MO, DY
HR, MI, SEC

TIME

S/C POSITION
ALT RT 2740.30 KM
LAT 0.0596 KM/SEC
LAT .14.19 DEG
LONG 91.47 DEG

N.DEV.

S/C ORIENTATION
TILT ANG 0.80 DEG
TILT AZIM 311.87 DEG
SWING ANG 125.78 DEG
N.DEV. 354.17 DEG

PHOTO ILLUMINATION
SUN AZIM 97.95 DEG
INCID ANG 61.59 DEG
EMISS ANG 2.05 DEG
PHASE ANG 59.89 DEG
ALPHA 1.70 DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	25.84 DEG	AB 400.2 KM
A LONG	143.81 DEG	BC 016.8 KM
B LAT	-25.65 DEG	CD 531.8 KM
B LONG	139.24 DEG	DA 460.6 KM
C LAT	-10.39 DEG	TILT DISTANCE 1.1
C LONG	41.24 DEG	
D LAT	39.72 DEG	
D LONG	24.92 DEG	

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 31.45 DEG AB 010.4 KM

A LONG 97.33 DEG BC 253.1 KM

B LAT -2.12 DEG CD 013.4 KM

B LONG 92.90 DEG DA 255.2 KM

C LAT -1.35 DEG TILT DISTANCE

C LONG 84.57 DEG 8.4

D LAT 32.48 DEG

D LONG 87.47 DEG

PHOTO ILLUMINATION

SUN AZIM 98.17 DEG
INCID ANG 61.61 DEG
EMISS ANG 2.31 DEG
PHASE ANG 59.89 DEG
ALPHA 1.71 DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	30.24 DEG	AB 403.6 KM
A LONG	144.56 DEG	BC 020.6 KM
B LAT	-29.65 DEG	CD 756.0 KM
B LONG	139.25 DEG	DA 472.9 KM
C LAT	-9.75 DEG	TILT DISTANCE 1.2
C LONG	41.80 DEG	
D LAT	39.65 DEG	
D LONG	23.65 DEG	

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 31.89 DEG AB 010.9 KM

A LONG 97.41 DEG BC 252.8 KM

B LAT -1.70 DEG CD 013.9 KM

B LONG 92.93 DEG DA 255.7 KM

C LAT -0.92 DEG TILT DISTANCE

C LONG 84.61 DEG 9.5

D LAT 32.93 DEG

D LONG 87.48 DEG

MISSION /

FRAME NO.

4020
YR, MO, DY
HR, MI, SEC

TIME

S/C POSITION
ALT RT 2740.91 KM
LAT 0.0603 KM/SEC
LAT 14.34 DEG
LONG 91.49 DEG

N.DEV. 354.17 DEG

PHOTO ILLUMINATION

SUN AZIM 98.17 DEG
INCID ANG 61.61 DEG
EMISS ANG 2.31 DEG
PHASE ANG 59.89 DEG
ALPHA 1.71 DEG

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT	
4021	YR, MO, DY HR, MI, SEC	670513 180233.51	AL1 2979.20 KM ALT RT 0.1727 KM/SEC LAT 42.68 DEG LONG 94.55 DEG	TILT ANG 1.82 DEG TILT AZIM 85.89 DEG SWING ANG 249.42 DEG N.DEV. 339.62 DEG	SUN AZIM 117.80 DEG INCID ANG 62.16 DEG EMISS ANG 4.94 DEG PHASE ANG 57.34 DEG ALPHA -4.40 DEG	LATITUDE 42.97 DEG LONGITUDE 98.82 DEG	
MEDIUM RESOLUTION							
MISSION/ FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION		
4022	YR, MO, DY HR, MI, SEC	670511 180243.61	A LAT 17.18 DEG A LONG 151.52 DEG B LAT -3.88 DEG B LONG 142.31 DEG C LAT 3.30 DEG C LONG 36.74 DEG D LAT 6C.28 DEG D LONG 2.48 DEG	AB 311.8 KM BC 600.9 KM CD 269.3 KM DA 573.3 KM TILT DISTANCE 2.5	A LAT 57.38 DEG A LONG 119.82 DEG B LAT 23.97 DEG B LONG 96.86 DEG C LAT 26.71 DEG C LONG 87.21 DEG D LAT 61.96 DEG D LONG 103.81 DEG	CORNER COORDINATE	SIDE LENGTH
MEDIUM RESOLUTION							
MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT	
4022	YR, MO, DY HR, MI, SEC	670511 180243.61	AL1 2980.95 KM ALT RT 0.1732 KM/SEC LAT 43.02 DEG LONG 94.58 DEG	TILT ANG 1.84 DEG TILT AZIM 82.70 DEG SWING ANG 245.21 DEG N.DEV. 339.53 DEG	SUN AZIM 118.04 DEG INCID ANG 63.08 DEG EMISS ANG 5.02 DEG PHASE ANG 67.34 DEG ALPHA -4.30 DEG	LATITUDE 43.34 DEG LONGITUDE 98.91 DEG	
MEDIUM RESOLUTION							
MISSION/ FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION		
4022	YR, MO, DY HR, MI, SEC	670511 180243.61	A LAT 17.44 DEG A LONG 152.20 DEG B LAT -2.57 DEG B LONG 141.73 DEG C LAT 1.52 DEG C LONG 35.44 DEG D LAT 60.00 DEG D LONG 0.23 DEG	AB 312.7 KM BC 580.2 KM CD 330.2 KM DA 005.2 KM TILT DISTANCE 2.5	A LAT 57.75 DEG A LONG 120.24 DEG B LAT 24.37 DEG B LONG 96.91 DEG C LAT 27.11 DEG C LONG 87.23 DEG D LAT 62.39 DEG D LONG 104.06 DEG	CORNER COORDINATE	SIDE LENGTH

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MISSION/
FRAME NO.

4023 TIME 670511 S/C POSITION ALT 2982.72 KM TILT ANG 1.88 DEG SUN AZIM 118.28 DEG LATITUDE 43.71 DEG
YR, MO, DY 0.1736 KM/SEC ALT-RT 0.1736 KM SEC TILT AZIM 78.62 DEG INCID ANG 63.19 DEG LONGITUDE 99.39 DEG
HR, MI, SEC 180353.81 LAT 43.16 DEG SWING ANG 241.11 DEG EMISS ANG 5.13 DEG
LONG 94.60 DEG N.DEV. 339.43 DEG PHASE ANG 67.34 DEG
N.DEV. ALPHA -4.19 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.70 DEG AB 313.7 KM
A LONG 152.49 DEG BC 564.0 KM
B LAT -1.46 DEG CD 255.2 KM
B LONG 141.31 DEG DA 640.7 KM
C LAT 4.05 DEG TILT DISTANCE
C LONG 36.97 DEG 2.6
D LAT 59.63 DEG
D LONG -2.20 DEG

S/C ORIENTATION
S/C POSITION ALT 2984.47 KM TILT ANG 1.93 DEG SUN AZIM 118.53 DEG LATITUDE 44.08 DEG
TIME 670511 ALT RT 0.1741 KM/SEC TILT AZIM 74.87 DEG INCID ANG 63.31 DEG LONGITUDE 99.09 DEG
HR, MI, SEC 1804 3.91 LAT 43.29 DEG SWING ANG 237.24 DEG EMISS ANG 5.26 DEG
LONG 94.62 DEG N.DEV. 339.34 DEG PHASE ANG 67.34 DEG
N.DEV. ALPHA -4.08 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.95 DEG AB 314.9 KM
A LONG 162.79 DEG BC 550.8 KM
B LAT -0.49 DEG CD 296.4 KM
B LONG 140.59 DEG DA 680.4 KM
C LAT 3.15 DEG TILT DISTANCE
C LONG 36.10 DEG 2.7
D LAT 59.13 DEG
D LONG -4.78 DEG

MISSION
FRAME NO.

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

MISSION/
FRAME NO.

4024 TIME 670511 S/C POSITION ALT 2984.47 KM TILT ANG 1.93 DEG SUN AZIM 118.53 DEG LATITUDE 44.08 DEG
YR, MO, DY 0.1741 KM SEC ALT RT 0.1741 KM SEC TILT AZIM 74.87 DEG INCID ANG 63.31 DEG LONGITUDE 99.09 DEG
HR, MI, SEC 1804 3.91 LAT 43.29 DEG SWING ANG 237.24 DEG EMISS ANG 5.26 DEG
LONG 94.62 DEG N.DEV. 339.34 DEG PHASE ANG 67.34 DEG
N.DEV. ALPHA -4.08 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.95 DEG AB 314.9 KM
A LONG 162.79 DEG BC 550.8 KM
B LAT -0.49 DEG CD 296.4 KM
B LONG 140.59 DEG DA 680.4 KM
C LAT 3.15 DEG TILT DISTANCE
C LONG 36.10 DEG 2.7
D LAT 59.13 DEG
D LONG -4.78 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 58.49 DEG AB 112.9 KM
A LONG 121.12 DEG BC 276.1 KM
B LAT 25.18 DEG CD 104.1 KM
B LONG 97.02 DEG DA 281.9 KM
C LAT 27.90 DEG TILT DISTANCE
C LONG .87-.29 DEG
D LAT 63.24 DEG
D LONG 104.58 DEG

S/C ORIENTATION
S/C POSITION ALT 2982.72 KM TILT ANG 1.88 DEG SUN AZIM 118.28 DEG LATITUDE 43.71 DEG
TIME 670511 ALT RT 0.1736 KM SEC TILT AZIM 78.62 DEG INCID ANG 63.19 DEG LONGITUDE 99.39 DEG
HR, MI, SEC 180353.81 LAT 43.16 DEG SWING ANG 241.11 DEG EMISS ANG 5.13 DEG
LONG 94.60 DEG N.DEV. 339.43 DEG PHASE ANG 67.34 DEG
N.DEV. ALPHA -4.19 DEG

S/C ORIENTATION
S/C POSITION ALT 2984.47 KM TILT ANG 1.93 DEG SUN AZIM 118.53 DEG LATITUDE 44.08 DEG
TIME 670511 ALT RT 0.1741 KM SEC TILT AZIM 74.87 DEG INCID ANG 63.31 DEG LONGITUDE 99.09 DEG
HR, MI, SEC 1804 3.91 LAT 43.29 DEG SWING ANG 237.24 DEG EMISS ANG 5.26 DEG
LONG 94.62 DEG N.DEV. 339.34 DEG PHASE ANG 67.34 DEG
N.DEV. ALPHA -4.08 DEG

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MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4025 YR, MO, DY HR, MI, SEC	57CE11 23:42.01	ALT RT 6109.67 KM 0.0028 KM/SEC	TIILT ANG 4.19 DEG TILT AZIM 101.23 DEG SWING ANG 120.94 DEG N.DEV. LONG -92.94 DEG	SUN AZIM 267.60 DEG INCID ANG 133.55 DEG EMISS ANG 19.28 DEG PHASE ANG 114.77 DEG ALPHA 18.98 DEG	LATITUDE -3.72 DEG LONGITUDE -78.12 DEG
MEDIUM RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH		
		A LAT C* DEG	AB C* KM	CORNER COORDINATE	HIGH RESOLUTION
		A LONG 0* DEG	BC 0* KM	A LAT -48.50 DEG	SIDE LENGTH
		B LAT 0* DEG	CD 0* KM	A LONG -84.39 DEG	AB 377.5 KM
		B LONG C* DEG	DA C* KM	B LAT 37.92 DEG	BC 693.8 KM
		C LAT C* DEG	DE 5.8 KM	B LONG -85.32 DEG	CD 932.4 KM
		C LONG C* DEG	TIILT DISTANCE	C LAT 40.22 DEG	DA B24.4 KM
		D LAT 0* DEG	5.8	C LONG -55.63 DEG	44.7 TILT DISTANCE
		D LONG 0* DEG		D LAT -50.98 DEG	
		D LONG 0* DEG		D LONG -43.60 DEG	
HIGH RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH		
		A LAT C* DEG	AB C* KM	CORNER COORDINATE	HIGH RESOLUTION
		A LONG 0* DEG	BC 0* KM	A LAT -23.85 DEG	SIDE LENGTH
		B LAT 0* DEG	CD 0* KM	A LONG 87.45 DEG	AB 136.6 KM
		B LONG C* DEG	DA C* KM	B LAT -56.33 DEG	BC 294.9 KM
		C LAT C* DEG	DE 5.8 KM	B LONG 115.09 DEG	CD 112.5 KM
		C LONG C* DEG	TIILT DISTANCE	C LAT -61.79 DEG	DA 281.4 KM
		D LAT 0* DEG	6.3	C LONG 99.30 DEG	48.8 TILT DISTANCE
		D LONG 0* DEG		D LAT -27.25 DEG	
		D LONG 0* DEG		D LONG 77.85 DEG	
MEDIUM RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH		
		A LAT C* DEG	AB 321.3 KM	CORNER COORDINATE	HIGH RESOLUTION
		A LONG 0* DEG	BC 223.5 KM	A LAT -23.85 DEG	SIDE LENGTH
		B LAT -50.65 DEG	CD 937.7 KM	A LONG 87.45 DEG	AB 136.6 KM
		B LONG 26.13 DEG	DA 203.5 KM	B LAT -56.33 DEG	BC 294.9 KM
		C LAT -63.81 DEG	TIILT DISTANCE	B LONG 115.09 DEG	CD 112.5 KM
		C LONG -37.30 DEG	6.3	C LAT -61.79 DEG	DA 281.4 KM
		D LAT 1.61 DEG		C LONG 99.30 DEG	48.8 TILT DISTANCE
		D LONG 30.40 DEG		D LAT -27.25 DEG	
				D LONG 77.85 DEG	
HIGH RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH		
		A LAT C* DEG	AB C* KM	CORNER COORDINATE	HIGH RESOLUTION
		A LONG 0* DEG	BC 0* KM	A LAT -23.85 DEG	SIDE LENGTH
		B LAT 0* DEG	CD 0* KM	A LONG 87.45 DEG	AB 136.6 KM
		B LONG C* DEG	DA C* KM	B LAT -56.33 DEG	BC 294.9 KM
		C LAT C* DEG	DE 5.8 KM	B LONG 115.09 DEG	CD 112.5 KM
		C LONG C* DEG	TIILT DISTANCE	C LAT -61.79 DEG	DA 281.4 KM
		D LAT 0* DEG	6.3	C LONG 99.30 DEG	48.8 TILT DISTANCE
		D LONG 0* DEG		D LAT -27.25 DEG	
		D LONG 0* DEG		D LONG 77.85 DEG	
PHOTO ILLUMINATION					
		SUN AZIM 64.43 DEG	INCID ANG 65.43 DEG	SUN AZIM 64.43 DEG	PRINCIPAL POINT
		EMISS ANG 12.54 DEG	PHASE ANG 75.66 DEG	EMISS ANG 12.54 DEG	
		ALPHA -11.34 DEG		ALPHA -11.34 DEG	
PRINCIPAL POINT					
		LATITUDE -42.74 DEG	LONGITUDE 90.35 DEG	LATITUDE -42.74 DEG	

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MISSION /

FRAME NO.

TIME

S/C POSITION
 ALT 2747.19 KM
 ALT RT -0.2667 KM/SEC
 LAT -14.35 DEG
 LONG 82.59 DEG
 N.DEV. 4.98 DEG

TIME

S/C POSITION
 ALT 2739.96 KM
 ALT RT 0.0592 KM/SEC
 LAT 13.94 DEG
 LONG 84.83 DEG

S/C ORIENTATION
 TILT ANG 0.55 DEG
 TILT AZIM 175.08 DEG
 SWING ANG 0.94 DEG
 N.DEV. 4.98 DEG

S/C ORIENTATION

TILT ANG 1.05 DEG
 TILT AZIM 258.61 DEG
 SWING ANG 72.62 DEG
 N.DEV. 354.67 DEG

S/C POSITION

ALT 2739.96 KM
 ALT RT 0.0592 KM/SEC
 LAT 13.94 DEG
 LONG 84.83 DEG

PHOTO ILLUMINATION
 SUN AZIM 81.87 DEG
 INCID ANG 63.71 DEG
 EMISS ANG 1.43 DEG
 PHASE ANG 63.64 DEG
 ALPHA 0.06 DEG

PHOTO ILLUMINATION

SUN AZIM 81.87 DEG
 INCID ANG 63.71 DEG
 EMISS ANG 1.43 DEG
 PHASE ANG 63.64 DEG
 ALPHA 0.06 DEG

MISSION /

FRAME NO.

TIME

S/C POSITION
 ALT 2739.96 KM
 ALT RT 0.0592 KM/SEC
 LAT 13.94 DEG
 LONG 84.83 DEG

TIME

S/C POSITION
 ALT 2739.96 KM
 ALT RT 0.0592 KM/SEC
 LAT 13.94 DEG
 LONG 84.83 DEG

S/C ORIENTATION

TILT ANG 1.05 DEG
 TILT AZIM 258.61 DEG
 SWING ANG 72.62 DEG
 N.DEV. 354.67 DEG

S/C ORIENTATION

TILT ANG 1.05 DEG
 TILT AZIM 258.61 DEG
 SWING ANG 72.62 DEG
 N.DEV. 354.67 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.30 DEG
 INCID ANG 63.78 DEG
 EMISS ANG 4.78 DEG
 PHASE ANG 59.25 DEG
 ALPHA 4.51 DEG

PHOTO ILLUMINATION

SUN AZIM 96.30 DEG
 INCID ANG 63.78 DEG
 EMISS ANG 4.78 DEG
 PHASE ANG 59.25 DEG
 ALPHA 4.51 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 38.86 DEG AB 96.3 KM
 A LONG 152.85 DEG BC 025.9 KM
 B LAT -32.96 DEG CD 86.4 KM
 B LONG 130.29 DEG DA 472.5 KM
 C LAT -2.13 DEG TILT DISTANCE 2.5
 C LONG 34.24 DEG
 D LAT 24.48 DEG
 D LONG 15.35 DEG

CORNER COORDINATE SIDE LENGTH

A LAT 29.55 DEG AB 009.1 KM
 A LONG 68.21 DEG BC 256.6 KM
 B LAT -4.03 DEG CD 017.2 KM
 B LONG 84.31 DEG DA 254.0 KM
 C LAT -3.43 DEG TILT DISTANCE 19.7
 C LONG 75.84 DEG
 D LAT 30.54 DEG
 D LONG 78.58 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.94 DEG AB 014.5 KM
 A LONG 85.60 DEG BC 255.9 KM
 B LAT -31.82 DEG CD 014.5 KM
 B LONG 89.36 DEG DA 253.4 KM
 C LAT -32.66 DEG TILT DISTANCE 5.9
 C LONG 79.41 DEG
 D LAT 1.24 DEG
 D LONG 77.06 DEG

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MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION		PRINCIPAL POINT	
				TILT ANG	DEG	SUN AZIM	114.13 DEG
4025	670512 YR-MD-DY	ALT 2981.39 KM	TILT AZIM 149.47 DEG	INCID ANG	64.58 DEG	LATITUDE	41.32 DEG
	063415.51 HR-MI-SEC	ALT RT 0.1733 KM/SEC	SWING ANG 313.28 DEG	EMISS ANG	2.87 DEG	LONGITUDE	89.17 DEG
		LAT 42.89 DEG	N.DEV.	PHASE ANG	65.90 DEG		
		LONG 87.94 DEG		ALPHA	-2.34 DEG		
MEDIUM RESOLUTION							
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE	
A LAT	22.55 DEG	AB 295.7 KM	A LAT	55.36 DEG	AB 107.3 KM	B LAT	107.01 DEG
A LONG	164.75 DEG	BC 527.5 KM	A LONG	21.85 DEG	BC 279.4 KM	B LONG	88.23 DEG
B LAT	C 2.8 DEG	CD 613.3 KM	B LONG	24.15 DEG	DA 275.5 KM	C LAT	78.51 DEG
B LONG	125.67 DEG	DA 939.5 KM	C LONG	50.12 DEG	TILT DISTANCE	D LAT	11.2 DEG
C LAT.	4.58 DEG	TILT DISTANCE	D LONG	91.21 DEG			
C LONG	26.89 DEG						
D LAT	55.57 DEG						
D LONG	-1.69 DEG						
HIGH RESOLUTION							
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE	
A LAT	112.34 DEG	SUN AZIM 112.34 DEG	A LAT	68.03 DEG	SUN AZIM 112.34 DEG	B LAT	43.97 DEG
A LONG	21.85 DEG	INCID ANG 68.03 DEG	A LONG	29.42 DEG	INCID ANG 68.03 DEG	B LONG	85.39 DEG
B LAT	88.23 DEG	EMISS ANG 29.42 DEG	B LONG	90.19 DEG	EMISS ANG 29.42 DEG	C LAT	
B LONG	24.15 DEG	PHASE ANG 76.68 DEG	C LONG	3.46 DEG	PHASE ANG 76.68 DEG	D LAT	04.47
C LAT	78.51 DEG	ALPHA -11.57 DEG	D LONG	77.02 DEG			
C LONG	11.2 DEG		D LAT	63.32 DEG			
D LAT	91.21 DEG		D LONG	73.90 DEG			
D LONG	-22.63 DEG						
MEDIUM RESOLUTION							
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE	
A LAT	330.41 KM	AB 640.9 KM	A LAT	64.15 DEG	AB 738.3 KM	A LONG	96.32 DEG
A LONG	0.2287 KM/SEC	BC 5.34 KM	A LONG	4.23 DEG	BC 409.3 KM	B LAT	4.23 DEG
B LAT	63.17 DEG	CD 3. KM	B LONG	90.19 DEG	CD 731.5 KM	B LONG	295.6 KM
B LONG	55.02 DEG	DA 943.7 KM	C LAT	3.46 DEG	TILT DISTANCE	C LONG	77.02 DEG
C LAT	0. DEG	TILT DISTANCE	D LAT	63.32 DEG		D LONG	73.90 DEG
C LONG	2. DEG						
D LAT	48.67 DEG						
D LONG	-22.63 DEG						
HIGH RESOLUTION							
CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE		SIDE LENGTH	CORNER COORDINATE	
A LAT	9.73 DEG	SUN AZIM 9.73 DEG	A LAT	112.34 DEG	SUN AZIM 112.34 DEG	B LAT	43.97 DEG
A LONG	1.96.43 DEG	INCID ANG 68.03 DEG	A LONG	68.03 DEG	INCID ANG 68.03 DEG	B LONG	85.39 DEG
B LAT	10.92 DEG	EMISS ANG 29.42 DEG	B LONG	90.19 DEG	EMISS ANG 29.42 DEG	C LAT	
B LONG	359.22 DEG	PHASE ANG 76.68 DEG	C LONG	3.46 DEG	PHASE ANG 76.68 DEG	D LAT	04.47
C LAT		ALPHA -11.57 DEG	D LONG				
C LONG			D LAT				
D LAT			D LONG				
D LONG							

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MISSION/
FRAME NO.

4032 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 3504.93 KM TILT ANG 2.33 DEG SUN AZIM 63.49 DEG LATITUDE -71.41 DEG
 HR, MI, SEC 154745.91 ALT RT -0.2448 KM/SEC TILT AZIM 98.97 DEG INCID ANG 81.72 DEG LONGITUDE 77.79 DEG
 LAT -71.24 DEG SWING ANG 266.19 DEG EMISS ANG 17.05 DEG
 LONG 63.03 DEG N.DEV. 1.18 DEG PHASE ANG 88.26 DEG
 ALPHA -5.55 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -37.32 DEG AB 168.1 KM
 A LONG 7.94 DEG BC 276.7 KM
 B LAT -41.17 DEG CD 826.5 KM
 B LONG -2.78 DEG DA 820.2 KM
 C LAT -27.88 DEG TILT DISTANCE 3.2
 C LONG -36.69 DEG
 D LAT -5.53 DEG
 D LONG 26.51 DEG

MISSION/
FRAME NO.
 4033 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 2684.56 KM TILT ANG 4.74 DEG SUN AZIM 64.90 DEG LATITUDE -41.84 DEG
 HR, MI, SEC 1620 1.11 ALT RT -0.1742 KM/SEC TILT AZIM 92.49 DEG INCID ANG 65.15 DEG LONGITUDE 84.13 DEG
 LAT -42.02 DEG SWING ANG 239.41 DEG EMISS ANG 12.98 DEG
 LONG 73.04 DEG N.DEV. 24.22 DEG PHASE ANG 77.40 DEG
 ALPHA -12.32 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -43.01 DEG AB 299.5 KM
 A LONG 34.11 DEG BC 221.0 KM
 B LAT -50.08 DEG CD 035.1 KM
 B LONG 31.47 DEG DA 269.6 KM
 C LAT -64.79 DEG TILT DISTANCE 6.5
 C LONG -45.55 DEG
 D LAT 4.11 DEG
 D LONG 23.34 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -48.44 DEG AB 318.0 KM
 A LONG 86.31 DEG BC 331.7 KM
 B LAT -92.54 DEG CD 352.9 KM
 B LONG -163.22 DEG DA 333.0 KM
 C LAT -84.34 DEG TILT DISTANCE
 C LONG -50.42 DEG 24.8
 D LAT -49.05 DEG
 D LONG 69.61 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -48.44 DEG AB 318.0 KM
 A LONG 86.31 DEG BC 331.7 KM
 B LAT -92.54 DEG CD 352.9 KM
 B LONG -163.22 DEG DA 333.0 KM
 C LAT -84.34 DEG TILT DISTANCE
 C LONG -50.42 DEG 24.8
 D LAT -49.05 DEG
 D LONG 69.61 DEG

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MISSION/
FRAME NO.4034
YR, MO, DY
HR, MI, SEC

S/C POSITION
 ALT 2746.33 KM
 ALT RT -0.0063 KM/SEC
 LAT -14.41 DEG
 LONG 75.97 DEG

N.DEV. 5.07 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 18.30 DEG	AB 480.0 KM
A LONG 120.45 DEG	BC 396.1 KM
B LAT -25.87 DEG	CD 419.6 KM
B LONG 136.03 DEG	DA 093.9 KM
C LAT -37.86 DEG	TILT DISTANCE 0.5
C LONG 23.88 DEG	
D LAT -21.36 DEG	
D LONG 19.51 DEG	

S/C ORIENTATION
 TILT ANG 0.42 DEG
 TILT AZIM 116.77 DEG
 SWING ANG 301.68 DEG
 N.DEV. 5.07 DEG

PHOTO ILLUMINATION
 SUN AZIM 82.09 DEG
 INCID ANG 63.60 DEG
 EMISS ANG 1.09 DEG
 PHASE ANG 64.50 DEG
 ALPHA -0.91 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	2.56 DEG
A LONG	79.34 DEG
B LAT	-31.21 DEG
B LONG	83.30 DEG
C LAT	-32.03 DEG
C LONG	73.44 DEG
D LAT	1.81 DEG
D LONG	70.98 DEG

MISSION/
FRAME NO.4035
YR, MO, DY
HR, MI, SEC

S/C POSITION
 ALT 2740.01 KM
 ALT RT 0.0597 KM/SEC
 LAT 13.88 DEG
 LONG 78.20 DEG

N.DEV. 354.09 DEG

PHOTO ILLUMINATION

SUN AZIM 96.71 DEG
 INCID ANG 62.89 DEG
 EMISS ANG 2.41 DEG
 PHASE ANG 60.59 DEG
 ALPHA 2.30 DEG

PRINCIPAL POINT

LATITUDE -14.71 DEG
 LONGITUDE 76.59 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 35.34 DEG	AB 056.6 KM
A LONG 147.07 DEG	BC 979.7 KM
B LAT -25.74 DEG	CD 538.3 KM
B LONG 124.44 DEG	DA 397.3 KM
C LAT -15.00 DEG	TILT DISTANCE 1.3
C LONG 19.55 DEG	
D LAT 37.89 DEG	
D LONG 15.90 DEG	

PHOTO ILLUMINATION

SUN AZIM 96.71 DEG
 INCID ANG 62.89 DEG
 EMISS ANG 2.41 DEG
 PHASE ANG 60.59 DEG
 ALPHA 2.30 DEG

PRINCIPAL POINT

LATITUDE 13.63 DEG
 LONGITUDE 76.71 DEG

PRINCIPAL POINT

AB 014.6 KM
 BC 255.1 KM
 CD 012.9 KM
 DA 254.1 KM

TILT DISTANCE 4.5

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MISSION/
FRAME NO.

4036
YR, MO, DY
HR, MI, SEC
180 452.31
:

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT RT 2982.45 KM 0.1737 KM/SEC	TIILT ANG 2.09 DEG SWING ANG 270.58 DEG N.DEV. 339.95 DEG.	SUN AZIM 116.60 DEG INCID ANG 62.79 DEG EMIS ANG 5.68 DEG PHASE ANG 68.44 DEG ALPHA -5.65 DEG	LATITUDE 41.65 DEG LONGITUDE 85.89 DEG
	LAT 42.83 DEG LONG 81.30 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 14.02 DEG A LONG 140.48 DEG	AB 319.3 KM BC 519.4 KM
B LAT 6.47 DEG B LONG 132.58 DEG	CD 923.3 KM DA 286.4 KM
C LAT 0.74 DEG C LONG 23.59 DEG	TIILT DISTANCE 2.9
D LAT 57.42 DEG D LONG -31.25 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 56.03 DEG A LONG 105.90 DEG	AB 111.7 KM BC 279.6 KM
B LAT 22.33 DEG B LONG 84.08 DEG	CD 100.5 KM DA 279.5 KM
C LAT 25.16 DEG C LONG 74.47 DEG	TIILT DISTANCE 22.2
D LAT 60.44 DEG D LONG 90.43 DEG	

MISSION/
FRAME NO.

4036
YR, MO, DY
HR, MI, SEC
042 645.81
:

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT RT 2981.59 KM -0.1738 KM/SEC	TIILT ANG 4.82 DEG SWING ANG 295.24 DEG N.DEV. 24.82 DEG	SUN AZIM 64.75 DEG INCID ANG 65.65 DEG EMIS ANG 13.21 DEG PHASE ANG 77.56 DEG ALPHA -12.12 DEG	LATITUDE -42.64 DEG LONGITUDE 77.77 DEG
	LAT -42.02 DEG LONG 66.45 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -43.55 DEG A LONG 26.56 DEG	AB 301.4 KM BC 222.3 KM
B LAT -51.31 DEG B LONG 24.01 DEG	CD 010.0 KM DA 254.4 KM
C LAT -63.23 DEG C LONG -55.96 DEG	TIILT DISTANCE 6.7
D LAT 3.53 DEG D LONG 16.66 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -23.78 DEG A LONG 74.65 DEG	AB 137.2 KM BC 296.0 KM
B LAT -56.00 DEG B LONG 102.78 DEG	CD 111.5 KM DA 282.0 KM
C LAT -61.57 DEG C LONG 87.17 DEG	TIILT DISTANCE 51.5
D LAT -27.28 DEG D LONG 65.08 DEG	

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MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	
4039	YR. MD. DY HR. MI. SEC	670613 050052.21	ALT 2744.59 KM ALT RT -0.0656 KM/SEC LAT -14.39 DEG LONG 69.36 DEG	TILT ANG 0.45 DEG TILT AZIM 135.12 DEG SWING ANG 320.06 DEG N.DEV. 5.38 DEG	SUN AZIM 82.17 DEG INCID ANG 64.19 DEG EMISS ANG 1.17 DEG PHASE ANG 64.90 DEG ALPHA -0.71 DEG

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	
4039	YR. MD. DY HR. MI. SEC	670613 050052.21	ALT 2744.59 KM ALT RT -0.0656 KM/SEC LAT -14.39 DEG LONG 69.36 DEG	TILT ANG 0.45 DEG TILT AZIM 135.12 DEG SWING ANG 320.06 DEG N.DEV. 5.38 DEG	SUN AZIM 82.17 DEG INCID ANG 64.19 DEG EMISS ANG 1.17 DEG PHASE ANG 64.90 DEG ALPHA -0.71 DEG

MISSION/

FRAME NO.

	SIDE LENGTH	HIGH RESOLUTION	
CORNER COORDINATE		CORNER COORDINATE	
A LAT	AB 474.1 KM	A LAT	2.32 DEG
A LONG	BC 401.1 KM	A LONG	72.61 DEG
B LAT	CD 424.6 KM	B LAT	-31.42 DEG
B LONG	DA 041.2 KM	B LONG	75.60 DEG
C LAT	-38.20 DEG	C LAT	-32.25 DEG
C LONG	16.23 DEG	C LONG	65.72 DEG
D LAT	20.28 DEG	D LAT	1.58 DEG
D LONG	14.31 DEG	D LONG	64.27 DEG

MISSION/

FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	
4040	YR. MD. DY HR. MI. SEC	670613 053129.01	ALT 2739.66 KM ALT RT 0.0605 KM/SEC LAT 13.90 DEG LONG 71.57 DEG	TILT ANG 0.93 DEG TILT AZIM 245.37 DEG SWING ANG 59.39 DEG N.DEV. 354.32 DEG	SUN AZIM 96.40 DEG INCID ANG 63.23 DEG EMISS ANG 2.41 DEG PHASE ANG 61.18 DEG ALPHA 2.04 DEG

MISSION/

FRAME NO.

	SIDE LENGTH	HIGH RESOLUTION	
CORNER COORDINATE		CORNER COORDINATE	
A LAT	AB 009.9 KM	A LAT	29.47 DEG
A LONG	BC 033.8 KM	A LONG	76.75 DEG
B LAT	CD 503.0 KM	B LAT	-4.11 DEG
B LONG	DA 359.5 KM	B LONG	72.63 DEG
C LAT	-14.92 DEG	C LAT	-3.38 DEG
C LONG	14.38 DEG	C LONG	64.21 DEG
D LAT	37.04 DEG	D LAT	30.45 DEG
D LONG	12.61 DEG	D LONG	67.16 DEG

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MISSION/
FRAME NO.4041
YR MO DY
HR MI SEC
060513
060535.21

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	2983.60 KM	TIILT ANG	2.53 DEG	SUN AZIM	116.70 DEG	LATITUDE	41.26 DEG
ALT RT	0.1743 KM/SEC	TIILT AZIM	109.55 DEG	INCID ANG	62.37 DEG	LONGITUDE	80.11 DEG
LAT	42.85 DEG	SWING ANG	272.56 DEG	EMIS ANG	6.88 DEG		
LONG	74.64 DEG	N.DEV.	339.50 DEG	PHASE ANG	69.25 DEG		
				ALPHA	-6.87 DEG		

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	46.50 DEG	AB 426.6 KM
A LONG	25.59 DEG	BC 227.6 KM
B LAT	39.27 DEG	CD 018.0 KM
B LONG	28.81 DEG	DA 300.8 KM
C LAT	1.83 DEG	TIILT DISTANCE
C LONG	15.93 DEG	3.5
D LAT	58.34 DEG	
D LONG	-40.65 DEG	

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	55.49 DEG	AB 114.5 KM
A LONG	100.25 DEG	BC 281.1 KM
B LAT	21.84 DEG	CD 101.8 KM
B LONG	78.21 DEG	DA 280.5 KM
C LAT	24.80 DEG	TIILT DISTANCE
C LONG	68.52 DEG	26.9
D LAT	59.98 DEG	
D LONG	85.00 DEG	

MISSION/
FRAME NO.4042
YR MO DY
HR MI SEC
060513
0645 6.21

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	3493.71 KM	TIILT ANG	0.76 DEG	SUN AZIM	130.13 DEG	LATITUDE	70.09 DEG
ALT RT	0.2443 KM/SEC	TIILT AZIM	168.59 DEG	INCID ANG	76.47 DEG	LONGITUDE	84.08 DEG
LAT	71.60 DEG	SWING ANG	357.38 DEG	EMIS ANG	2.28 DEG		
LONG	84.75 DEG	N.DEV.	349.42 DEG	PHASE ANG	77.69 DEG		
				ALPHA	-1.23 DEG		

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	25.54 DEG	AB 380.9 KM
A LONG	158.81 DEG	BC 068.4 KM
B LAT	16.34 DEG	CD 374.6 KM
B LONG	147.65 DEG	DA 007.2 KM
C LAT	26.43 DEG	TIILT DISTANCE
C LONG	1.58 DEG	1.0
D LAT	33.47 DEG	
D LONG	-5.81 DEG	

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	80.80 DEG	AB 303.2 KM
A LONG	177.68 DEG	BC 329.6 KM
B LAT	45.95 DEG	CD 302.9 KM
B LONG	86.05 DEG	DA 324.1 KM
C LAT	47.96 DEG	TIILT DISTANCE
C LONG	69.98 DEG	8.0
D LAT	87.22 DEG	
D LONG	-66.35 DEG	

PHOTO ILLUMINATION

SUN AZIM	INCID ANG	EMIS ANG	PHASE ANG
116.70 DEG	62.37 DEG	6.88 DEG	69.25 DEG
130.13 DEG	76.47 DEG	2.28 DEG	77.69 DEG
130.13 DEG	76.47 DEG	2.28 DEG	77.69 DEG
116.70 DEG	62.37 DEG	6.88 DEG	69.25 DEG

PRINCIPAL POINT

LATITUDE	LONGITUDE
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MISSION/ FRAME NO.		TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
4044	YR, MO, DY HR, MI, SEC	670513 154523.71	ALT RT	3497.5B KM -0.2449 KM/SEC	ALT AZIM	2.96 DEG 107.01 DEG	SUN AZIM	59.57 DEG 274.69 DEG	LATITUDE	72.12 DEG
MEDIUM RESOLUTION										
			CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
			A LAT	-40.69 DEG	AB 077.9 KM	A LAT	-49.13 DEG	AB 320.1 KM	A LAT	-49.13 DEG
			A LONG	-4.66 DEG	BC 271.1 KM	A LONG	75.23 DEG	BC 335.5 KM	A LONG	75.23 DEG
			B LAT	-44.28 DEG	CD 788.6 KM	B LAT	-80.5B DEG	CD 298.2 KM	B LAT	-80.5B DEG
			B LONG	-15.80 DEG	DA 873.9 KM	B LONG	-175.64 DEG	DA 333.5 KM	B LONG	-175.64 DEG
			C LAT	-27.50 DEG	TILT DISTANCE	C LAT	-84.72 DEG	TIILT DISTANCE	C LAT	-84.72 DEG
			C LONG	-54.49 DEG	4.1	C LONG	-81.76 DEG	31.6	C LONG	-81.76 DEG
			D LAT	-7.25 DEG		D LAT	-50.24 DEG		D LAT	-50.24 DEG
			D LONG	10.73 DEG		D LONG	58.25 DEG		D LONG	58.25 DEG
HIGH RESOLUTION										
			CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
			A LAT	2979.07 KM	ALT AZIM	5.08 DEG	SUN AZIM	64.71 DEG	PRINCIPAL POINT	PRINCIPAL POINT
			A LONG	-0.1737 KM/SEC	TILT AZIM	96.45 DEG	INCID ANG	65.46 DEG	LATITUDE	42.42 DEG
			B LAT	-42.04 DEG	SWING ANG	293.29 DEG	EMISS ANG	13.91 DEG	LONGITUDE	71.80 DEG
			B LONG	59.88 DEG	N.DEV.	24.82 DEG	PHASE ANG	78.29 DEG		
			C LAT	-64.12 DEG		ALPHA	-12.93 DEG			
MEDIUM RESOLUTION										
			CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
			A LAT	-43.86 DEG	AB 282.5 KM	A LAT	-23.51 DEG	AB 138.1 KM	A LAT	-23.51 DEG
			A LONG	-21.53 DEG	BC 220.8 KM	A LONG	68.71 DEG	BC 297.4 KM	A LONG	68.71 DEG
			B LAT	-50.51 DEG	CD 039.1 KM	B LAT	-55.73 DEG	CD 110.6 KM	B LAT	-55.73 DEG
			B LONG	1E.75 DEG	DA 239.3 KM	B LONG	96.81 DEG	DA 283.3 KM	B LONG	96.81 DEG
			C LAT	-64.12 DEG	TILT DISTANCE	C LAT	-61.29 DEG	TIILT DISTANCE	C LAT	-61.29 DEG
			C LONG	-62.74 DEG	7.1	C LONG	81.22 DEG	54.2	C LONG	81.22 DEG
			D LAT	3.95 DEG		D LAT	-27.06 DEG		D LAT	-27.06 DEG
			D LONG	11.34 DEG		D LONG	59.13 DEG		D LONG	59.13 DEG

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MISSION/
FRAME NO.4046
YR. MO. DY
HR. MI. SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 2742.64 KM	TILT ANG 0.48 DEG	SUN AZIM 82.31 DEG	LATITUDE -14.81 DEG
ALT RT -0.0652 KM/SEC	TILT AZIM 122.54 DEG	INCID ANG 64.52 DEG	LONGITUDE 63.41 DEG
LAT -14.40 DEG	SWING ANG 307.31 DEG	EMISS ANG 1.23 DEG	
LONG 62.75 DEG	N.DEV. 4.84 DEG	PHASE ANG 65.46 DEG	
		ALPHA -0.95 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 17.83 DEG	AB 479.9 KM	CORNER COORDINATE SIDE LENGTH
A LONG 107.10 DEG	BC 398.1 KM	A LAT 2.40 DEG AB 013.3 KM
B LAT -30.18 DEG	CD 416.1 KM	A LONG 66.22 DEG BC 254.9 KM
B LONG 123.23 DEG	DA 988.8 KM	B LAT -31.33 DEG CD 011.5 KM
C LAT -37.80 DEG	TILT DISTANCE 0.6	B LONG 70.04 DEG DA 253.6 KM
C LONG 10.46 DEG		C LAT -32.11 DEG TILT DISTANCE
D LAT 19.87 DEG		C LONG 160.18 DEG 5.0
D LONG 9.51 DEG		D LAT 1.69 DEG

MISSION/
FRAME NO.4047
YR. MO. DY
HR. MI. SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 2738.48 KM	TILT ANG 1.62 DEG	SUN AZIM 95.93 DEG	LATITUDE 13.32 DEG
ALT RT 0.0609 KM/SEC	TILT AZIM 257.73 DEG	INCID ANG 64.89 DEG	LONGITUDE 52.36 DEG
LAT 13.88 DEG	SWING ANG 71.12 DEG	EMISS ANG 4.18 DEG	
LONG 64.93 DEG	N.DEV. 353.96 DEG	PHASE ANG 60.94 DEG	
		ALPHA 3.94 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 37.28 DEG	AB 003.3 KM	CORNER COORDINATE SIDE LENGTH
A LONG 131.00 DEG	BC 068.0 KM	A LAT 29.45 DEG AB 008.7 KM
B LAT -33.79 DEG	CD 324.2 KM	A LONG 68.93 DEG BC 256.1 KM
B LONG 111.56 DEG	DA 465.9 KM	B LAT -4.06 DEG CD 015.7 KM
C LAT -11.40 DEG	TILT DISTANCE 2.2	B LONG 64.60 DEG DA 253.6 KM
C LONG 5.43 DEG		C LAT -3.34 DEG TILT DISTANCE
D LAT 36.33 DEG		C LONG 56.15 DEG 17.2
D LONG -4.13 DEG		D LAT 30.54 DEG

D LONG 59.34 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 2.40 DEG	AB 013.3 KM	CORNER COORDINATE SIDE LENGTH
A LONG 66.22 DEG	BC 254.9 KM	A LAT 29.45 DEG AB 008.7 KM
B LAT -31.33 DEG	CD 011.5 KM	A LONG 68.93 DEG BC 256.1 KM
B LONG 70.04 DEG	DA 253.6 KM	B LAT -4.06 DEG CD 015.7 KM
C LAT -32.11 DEG	TILT DISTANCE	B LONG 64.60 DEG DA 253.6 KM
C LONG 160.18 DEG		C LAT -3.34 DEG TILT DISTANCE
D LAT 1.69 DEG		C LONG 56.15 DEG 17.2
D LONG 57.87 DEG		D LAT 30.54 DEG

D LONG 59.34 DEG

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4048	YR. MO.DY HR.MI.SEC	670513 180648.11	ALT RT 0.178 KM/SEC	TILT ANG 1.90 DEG TILT AZIM 118.51 DEG SWING ANG 282.03 DEG N.DEV. 340.97 DEG	SUN AZIM 114.84 DEG INCID ANG 63.85 DEG EMISS ANG 5.17 DEG PHASE ANG 68.98 DEG ALPHA -5.14 DEG	LATITUDE 41.21 DEG LONGITUDE 71.77 DEG
MEDIUM RESOLUTION						
MISSION/ FRAME NO.	TIME	CORNER COORDINATE	SIDE LENGTH			
4048	YR. MO.DY HR.MI.SEC	A LAT 15.25 DEG A LONG 139.58 DEG B LAT 7.67 DEG B LONG 117.68 DEG C LAT 13.31 DEG C LONG 17.13 DEG D LAT 57.46 DEG D LONG -40.43 DEG	AB 324.7 KM BC 490.9 KM CD 511.8 KM DA 234.7 KM TILT DISTANCE 2.6			
HIGH RESOLUTION						
MISSION/ FRAME NO.	TIME	CORNER COORDINATE	SIDE LENGTH			
4049	YR. MO.DY HR.MI.SEC	670513 231648.01	ALT RT 0.0018 KM/SEC	TILT ANG 3.46 DEG TILT AZIM 35.59 DEG SWING ANG 36.55 DEG N.DEV. 179.24 DEG	SUN AZIM 277.31 DEG INCID ANG 123.43 DEG EMISS ANG 15.83 DEG PHASE ANG 114.82 DEG ALPHA 9.56 DEG	LATITUDE 10.22 DEG LONGITUDE -112.19 DEG
MEDIUM RESOLUTION						
MISSION/ FRAME NO.	TIME	CORNER COORDINATE	SIDE LENGTH			
4049	YR. MO.DY HR.MI.SEC	A LAT 0.0 DEG A LONG 0.0 DEG B LAT 0.0 DEG B LONG 0.0 DEG - LAT 0.0 DEG LONG 0.0 DEG -AT 0.0 DEG DNG 0.0 DEG	AB 0.0 KM BC 0.0 KM CD 0.0 KM DA 0.0 KM TILT DISTANCE 4.8			
HIGH RESOLUTION						
MISSION/ FRAME NO.	TIME	CORNER COORDINATE	SIDE LENGTH			
4049	YR. MO.DY HR.MI.SEC	A LAT -27.97 DEG A LONG -121.04 DEG B LAT 67.60 DEG B LONG -127.61 DEG C LAT 62.98 DEG C LONG -73.14 DEG D LAT -28.21 DEG D LONG -99.14 DEG	AB 372.8 KM BC 367.1 KM CD 433.1 KM DA 582.0 KM TILT DISTANCE 36.9			

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.
4050

TIME
670513
YR, MO, DY
HR, MI, SEC
231739.411

S/C POSITION
ALT 6113.97 KM
ALT RT 0.0007 KM/SEC
LAT -0.07 DEG
LONG -119.46 DEG

S/C ORIENTATION
TILT ANG 3.27 DEG
TILT AZIM 38.45 DEG
SWING ANG 39.42 DEG
N.DEV. 179.42 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0° DEG AB 0° KM
A LONG 0° DEG BC 0° KM
B LAT 0° DEG CD 0° KM
B LONG 0° DEG DA 0° KM
C LAT 0° DEG TILT DISTANCE 4.5
C LONG 0° DEG
D LAT 0° DEG
D LONG 0° DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0° DEG AB 656.8 KM
A LONG -120.97 DEG BC 457.1 KM
B LAT 70° 32 DEG CD 539.0 KM
B LONG -128.60 DEG DA 584.7 KM
C LAT 64.72 DEG TILT DISTANCE 34.9
C LONG -68.09 DEG
D LAT -29.63 DEG
D LONG -98.66 DEG

MISSION/
FRAME NO.
4051

TIME
670513
YR, MO, DY
HR, MI, SEC
2318 4.81

S/C POSITION
ALT 6113.98 KM
ALT RT 0.0001 KM/SEC
LAT -0.19 DEG
LONG -119.45 DEG

S/C ORIENTATION
TILT ANG 3.18 DEG
TILT AZIM 39.97 DEG
SWING ANG 40.94 DEG
N.DEV. 179.51 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 0° DEG AB 0° KM
A LONG 0° DEG BC 0° KM
B LAT 0° DEG CD 0° KM
B LONG 0° DEG DA 0° KM
C LAT 0° DEG TILT DISTANCE 4.4
C LONG 0° DEG
D LAT 0° DEG
D LONG 0° DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -29.37 DEG AB 656.8 KM
A LONG -120.97 DEG BC 457.1 KM
B LAT 70° 32 DEG CD 539.0 KM
B LONG -128.60 DEG DA 584.7 KM
C LAT 64.72 DEG TILT DISTANCE 34.9
C LONG -68.09 DEG
D LAT -29.63 DEG
D LONG -98.66 DEG

PHOTO ILLUMINATION
SUN AZIM 276.56 DEG
INCID ANG 123.63 DEG
EMISS ANG 14.95 DEG
PHASE ANG 114.82 DEG
ALPHA 9.59 DEG

PHOTO ILLUMINATION
SUN AZIM 276.19 DEG
INCID ANG 123.73 DEG
EMISS ANG 14.53 DEG
PHASE ANG 114.83 DEG
ALPHA 9.61 DEG

PRINCIPAL POINT
LATITUDE 9.05 DEG
LONGITUDE -112.14 DEG

PRINCIPAL POINT
LATITUDE 8.48 DEG
LONGITUDE -112.11 DEG

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MISSION/
FRAME NO.

4052

TIME

670514

YR.MD.DY

HR.MI.SEC

043024.21

S/C POSITION
ALT 2976.44 KM
ALT RT -0.1738 KM/SEC
LAT -42.06 DEG
LONG 53.33 DEG
N.DEV.S/C ORIENTATION
TILT ANG 4.48 DEG
TILT AZIM 99.76 DEG
SWING ANG 297.20 DEG
N.DEV.PHOTO ILLUMINATION
SUN AZIM 65.03 DEG
INCID ANG 65.93 DEG
EMISS ANG 12.25 DEG
PHASE ANG 77.97 DEG
ALPHA -11.14 DEGPRINCIPAL POINT
LATITUDE -42.91 DEG
LONGITUDE 63.81 DEGMISSION/
FRAME NO.

4053

TIME

670514

YR.MD.DY

HR.MI.SEC

050228.51

S/C POSITION
ALT 2740.23 KM
ALT RT -0.0651 KM/SEC
LAT -14.41 DEG
LONG 56.14 DEG
N.DEV.S/C ORIENTATION
TILT ANG 0.49 DEG
TILT AZIM 122.34 DEG
SWING ANG 307.79 DEG
N.DEV.PHOTO ILLUMINATION
SUN AZIM 82.44 DEG
INCID ANG 64.97 DEG
EMISS ANG 1.26 DEG
PHASE ANG 65.94 DEG
ALPHA -9.97 DEGPRINCIPAL POINT
LATITUDE -14.82 DEG
LONGITUDE 55.82 DEGMISSION/
FRAME NO.

4053

TIME

670514

YR.MD.DY

HR.MI.SEC

050228.51

S/C POSITION
ALT 478.2 KM
ALT RT 395.3 KM
LAT 413.8 KM
LONG 062.5 KM
N.DEV.S/C ORIENTATION
TILT ANG 0.5 DEG
TILT DISTANCE 0.5PHOTO ILLUMINATION
SUN AZIM 2.41 DEG
INCID ANG 59.40 DEG
EMISS ANG 31.24 DEG
PHASE ANG 63.71 DEG
ALPHA -32.15 DEGPRINCIPAL POINT
LATITUDE 012.4 KM
LONGITUDE 254.7 KM
CD 010.6 KM
DA 253.2 KM
TILT DISTANCE 5.2

MEDIUM RESOLUTION

MISSION/	FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4052	4053	670514	ALT 2976.44 KM ALT RT -0.1738 KM/SEC LAT -42.06 DEG LONG 53.33 DEG N.DEV.	TILT ANG 4.48 DEG TILT AZIM 99.76 DEG SWING ANG 297.20 DEG N.DEV.	SUN AZIM 65.03 DEG INCID ANG 65.93 DEG EMISS ANG 12.25 DEG PHASE ANG 77.97 DEG ALPHA -11.14 DEG	LATITUDE -42.91 DEG LONGITUDE 63.81 DEG
4053	4053	670514	ALT 2740.23 KM ALT RT -0.0651 KM/SEC LAT -14.41 DEG LONG 56.14 DEG N.DEV.	TILT ANG 0.49 DEG TILT AZIM 122.34 DEG SWING ANG 307.79 DEG N.DEV.	SUN AZIM 82.44 DEG INCID ANG 64.97 DEG EMISS ANG 1.26 DEG PHASE ANG 65.94 DEG ALPHA -9.97 DEG	LATITUDE -14.82 DEG LONGITUDE 55.82 DEG
4053	4053	670514	ALT 478.2 KM ALT RT 395.3 KM LAT 413.8 KM LONG 062.5 KM N.DEV.	TILT ANG 0.5 DEG TILT DISTANCE 0.5	SUN AZIM 2.41 DEG INCID ANG 59.40 DEG EMISS ANG 31.24 DEG PHASE ANG 63.71 DEG ALPHA -32.15 DEG	LATITUDE 012.4 KM LONGITUDE 254.7 KM CD 010.6 KM DA 253.2 KM TILT DISTANCE 5.2

HIGH RESOLUTION

MISSION/	FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4052	4053	670514	ALT 2976.44 KM ALT RT -0.1738 KM/SEC LAT -42.06 DEG LONG 53.33 DEG N.DEV.	TILT ANG 4.48 DEG TILT AZIM 99.76 DEG SWING ANG 297.20 DEG N.DEV.	SUN AZIM 65.03 DEG INCID ANG 65.93 DEG EMISS ANG 12.25 DEG PHASE ANG 77.97 DEG ALPHA -11.14 DEG	LATITUDE -42.91 DEG LONGITUDE 63.81 DEG
4053	4053	670514	ALT 2740.23 KM ALT RT -0.0651 KM/SEC LAT -14.41 DEG LONG 56.14 DEG N.DEV.	TILT ANG 0.49 DEG TILT AZIM 122.34 DEG SWING ANG 307.79 DEG N.DEV.	SUN AZIM 82.44 DEG INCID ANG 64.97 DEG EMISS ANG 1.26 DEG PHASE ANG 65.94 DEG ALPHA -9.97 DEG	LATITUDE -14.82 DEG LONGITUDE 55.82 DEG
4053	4053	670514	ALT 478.2 KM ALT RT 395.3 KM LAT 413.8 KM LONG 062.5 KM N.DEV.	TILT ANG 0.5 DEG TILT DISTANCE 0.5	SUN AZIM 2.41 DEG INCID ANG 59.40 DEG EMISS ANG 31.24 DEG PHASE ANG 63.71 DEG ALPHA -32.15 DEG	LATITUDE 012.4 KM LONGITUDE 254.7 KM CD 010.6 KM DA 253.2 KM TILT DISTANCE 5.2

MISSION/
FRAME NO.

4053

TIME

670514

YR.MD.DY

HR.MI.SEC

050228.51

S/C POSITION
ALT 2976.44 KM
ALT RT -0.1738 KM/SEC
LAT -42.06 DEG
LONG 53.33 DEG
N.DEV.S/C ORIENTATION
TILT ANG 4.48 DEG
TILT AZIM 99.76 DEG
SWING ANG 297.20 DEG
N.DEV.PHOTO ILLUMINATION
SUN AZIM 65.03 DEG
INCID ANG 65.93 DEG
EMISS ANG 12.25 DEG
PHASE ANG 77.97 DEG
ALPHA -11.14 DEGPRINCIPAL POINT
LATITUDE -42.91 DEG
LONGITUDE 63.81 DEG

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MISSION/
FRAME NO.4055
YR, MO, DY
HR, MI, SECTIME
670514
053233.01

S/C POSITION
ALT RT 2736.67 KM
0.0613 KM/SEC
LAT 13.89 DEG
LONG 58.29 DEG

N.DEV.
S/C ORIENTATION
TILT ANG 1.00 DEG
TILT AZIM 259.22 DEG
SWING ANG 73.58 DEG
N.DEV.
354.72 DEGMISSION/
FRAME NO.4054
YR, MO, DY
HR, MI, SECTIME
670514
053233.01

S/C POSITION
ALT RT 2736.67 KM
0.0613 KM/SEC
LAT 13.89 DEG
LONG 58.29 DEG

N.DEV.
S/C ORIENTATION
TILT ANG 1.00 DEG
TILT AZIM 259.22 DEG
SWING ANG 73.58 DEG
N.DEV.
354.72 DEGMISSION/
FRAME NO.4054
YR, MO, DY
HR, MI, SECTIME
670514
0607 6.51

S/C POSITION
ALT RT 2982.13 KM
0.1752 KM/SEC
LAT 42.84 DEG
LONG 61.25 DEG

N.DEV.
S/C ORIENTATION
TILT ANG 1.91 DEG
TILT AZIM 102.32 DEG
SWING ANG 265.87 DEG
N.DEV.
341.00 DEGMISSION/
FRAME NO.4055
YR, MO, DY
HR, MI, SECTIME
670514
0607 6.51

S/C POSITION
ALT RT 2982.13 KM
0.1752 KM/SEC
LAT 42.84 DEG
LONG 61.25 DEG

N.DEV.
S/C ORIENTATION
TILT ANG 1.91 DEG
TILT AZIM 102.32 DEG
SWING ANG 265.87 DEG
N.DEV.
341.00 DEGPHOTO ILLUMINATION
SUN AZIM 96.17 DEG
INCID ANG 64.47 DEG
EMISS ANG 3.57 DEG
PHASE ANG 62.02 DEG
ALPHA 2.45 DEGPHOTO ILLUMINATION
SUN AZIM 112.15 DEG
INCID ANG 64.25 DEG
EMISS ANG 5.18 DEG
PHASE ANG 69.36 DEG
ALPHA -5.11 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 29.86 DEG AB 308.3 KM
A LONG 63.13 DEG BC 254.6 KM
B LAT -3.70 DEG CD 112.7 KM
B LONG 59.22 DEG DA 253.4 KM
C LAT -3.03 DEG TILT DISTANCE
C LONG 50.82 DEG C LONG 50.82 DEG
D LAT 30.79 DEG D LONG 53.49 DEG
D LONG 53.49 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 29.86 DEG AB 308.3 KM
A LONG 63.13 DEG BC 254.6 KM
B LAT -3.70 DEG CD 112.7 KM
B LONG 59.22 DEG DA 253.4 KM
C LAT -3.03 DEG TILT DISTANCE
C LONG 50.82 DEG C LONG 50.82 DEG
D LAT 30.79 DEG D LONG 53.49 DEG
D LONG 53.49 DEG

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MISSION/

FRAME NO.

4056

TIME

670514

YR, MO, DY

064639.21

HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	349.66 KM	TIILT ANG 0.76 DEG	SUN AZIM 126.81 DEG	LATITUDE 70.35 DEG
ALT RT	0.2450 KM/SEC	TIILT AZIM 214.95 DEG	INCID ANG 77.51 DEG	LONGITUDE 68.44 DEG
LAT	71.63 DEG	SWING ANG 24.88 DEG	EMISS ANG 2.30 DEG	
LONG	71.06 DEG	N.DEV. 352.38 DEG	PHASE ANG 77.69 DEG	
			ALPHA -0.19 DEG	

MISSION/

FRAME NO.

4056

TIME

155118.21

YR, MO, DY

064639.21

HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	349.66 KM	TIILT ANG 0.76 DEG	SUN AZIM 126.81 DEG	LATITUDE 70.35 DEG
ALT RT	-0.2456 KM/SEC	TIILT AZIM 100.37 DEG	INCID ANG 81.53 DEG	LONGITUDE 54.49 DEG
LAT	-71.36 DEG	SWING ANG 268.72 DEG	EMISS ANG 8.10 DEG	
LONG	37.31 DEG	N.DEV. 4.51 DEG	PHASE ANG 89.04 DEG	
			ALPHA -7.52 DEG	

MISSION/

FRAME NO.

4058

TIME

670514

YR, MO, DY

155118.21

HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	349.64 KM	TIILT ANG 2.68 DEG	SUN AZIM 61.98 DEG	LATITUDE -71.58 DEG
ALT RT	-0.2456 KM/SEC	TIILT AZIM 100.37 DEG	INCID ANG 81.53 DEG	LONGITUDE 54.49 DEG
LAT	-71.36 DEG	SWING ANG 268.72 DEG	EMISS ANG 8.10 DEG	
LONG	37.31 DEG	N.DEV. 4.51 DEG	PHASE ANG 89.04 DEG	
			ALPHA -7.52 DEG	

MISSION/

FRAME NO.

4058

TIME

155118.21

YR, MO, DY

064639.21

HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	349.64 KM	TIILT ANG 2.68 DEG	SUN AZIM 61.98 DEG	LATITUDE -71.58 DEG
ALT RT	-0.2456 KM/SEC	TIILT AZIM 100.37 DEG	INCID ANG 81.53 DEG	LONGITUDE 54.49 DEG
LAT	-71.36 DEG	SWING ANG 268.72 DEG	EMISS ANG 8.10 DEG	
LONG	37.31 DEG	N.DEV. 4.51 DEG	PHASE ANG 89.04 DEG	
			ALPHA -7.52 DEG	

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MISSION/
FRAME NO.

4059 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 67C514 ALT 2974.56 KM TILT ANG 3.57 DEG SUN AZIM 68.54 DEG LATITUDE -41.75 DEG
 HR.MI.SEC 163121.81 ALT RT -0.1742 KM/SEC TILT AZIM H 89.42 DEG INCID ANG 68.28 DEG LONGITUDE 55.05 DEG
 LAT -42.11 DEG SWING ANG 286.93 DEG EMISS ANG 9.73 DEG
 LONG 46.79 DEG N.DEV. 22.35 DEG PHASE ANG 77.58 DEG
 ALPHA -9.42 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -41.85 DEG AB 34.9.6 KM
 A LONG 4.32 DEG BC 223.5 KM
 B LAT -48.96 DEG CD 014.1 KM
 B LONG 1.48 DEG DA 0B6.1 KM
 C LAT -61.62 DEG TILT DISTANCE
 C LONG -71.23 DEG 4.9
 D LAT -3.44 DEG
 D LONG -2.81 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -22.73 DEG AB 11.9.0 KM
 A LONG 52.46 DEG BC 286.3 KM
 B LAT -55.50 DEG CD 100.2 KM
 B LONG 77.37 DEG DA 279.9 KM
 C LAT -60.52 DEG TILT DISTANCE
 C LONG 62.17 DEG 38.1
 D LAT -26.00 DEG
 D LONG 42.95 DEG
 ALPHA 1.31 DEG

MISSION/
FRAME NO.

4060 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 670514 ALT 2737.79 KM TILT ANG 0.71 DEG SUN AZIM 83.55 DEG LATITUDE -13.58 DEG
 HR.MI.SEC 170325.51 ALT RT -0.0653 KM/SEC TILT AZIM H 319.31 DEG INCID ANG 66.65 DEG LONGITUDE 48.79 DEG
 LAT -14.43 DEG SWING ANG 145.37 DEG EMISS ANG 1.83 DEG
 LONG 49.54 DEG N.DEV. 5.89 DEG PHASE ANG 65.64 DEG
 ALPHA 1.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 19.43 DEG AB 416.0 KM
 A LONG 90.10 DEG BC 026.4 KM
 B LAT -33.89 DEG CD 493.0 KM
 B LONG 117.64 DEG DA 426.8 KM
 C LAT -36.97 DEG TILT DISTANCE
 C LONG -4.68 DEG 0.9
 D LAT 13.55 DEG
 D LONG -3.48 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 3.86 DEG AB 010.1 KM
 A LONG 51.21 DEG BC 252.5 KM
 B LAT -29.72 DEG CD 012.0 KM
 B LONG 55.47 DEG DA 255.1 KM
 C LAT -30.71 DEG TILT DISTANCE
 C LONG 45.89 DEG 7.5
 D LAT 3.05 DEG
 D LONG 42.80 DEG

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MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

ALT

2734.04

KM

ALT RT

0.0614

KM/SEC

SWING ANG

93.54

DEG

N.DEV.

355.66

DEG

PHASE ANG

62.27

DEG

ALPHA

3.10

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

1.21

DEG

TILT AZIM

278.36

DEG

INCID ANG

65.37

DEG

EMISS ANG

3.10

DEG

PHASE ANG

62.27

DEG

ALPHA

3.10

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.30

DEG

TILT AZIM

95.76

DEG

SWING ANG

260.08

DEG

N.DEV.

341.21

DEG

PHASE ANG

69.80

DEG

ALPHA

-5.25

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

115.03

DEG

INCID ANG

64.56

DEG

EMISS ANG

5.44

DEG

PHASE ANG

31.38

DEG

ALPHA

-5.25

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

278.36

DEG

INCID ANG

65.37

DEG

EMISS ANG

3.10

DEG

PHASE ANG

62.27

DEG

ALPHA

3.10

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

107.78

DEG

INCID ANG

881.3

DEG

EMISS ANG

2.22

DEG

PHASE ANG

0.82

DEG

ALPHA

66.08

DEG

TILT DISTANCE

2.7

KM

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

115.03

DEG

INCID ANG

64.56

DEG

EMISS ANG

5.44

DEG

PHASE ANG

31.38

DEG

ALPHA

-5.25

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

278.36

DEG

INCID ANG

65.37

DEG

EMISS ANG

5.44

DEG

PHASE ANG

69.80

DEG

ALPHA

-5.25

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

115.03

DEG

INCID ANG

64.56

DEG

EMISS ANG

5.44

DEG

PHASE ANG

31.38

DEG

ALPHA

-5.25

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

278.36

DEG

INCID ANG

65.37

DEG

EMISS ANG

5.44

DEG

PHASE ANG

69.80

DEG

ALPHA

-5.25

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

115.03

DEG

INCID ANG

64.56

DEG

EMISS ANG

5.44

DEG

PHASE ANG

31.38

DEG

ALPHA

-5.25

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

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PHASE ANG

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ALPHA

-5.25

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MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

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TILT AZIM

115.03

DEG

INCID ANG

64.56

DEG

EMISS ANG

5.44

DEG

PHASE ANG

31.38

DEG

ALPHA

-5.25

DEG

MISSION/

FRAME NO.

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION

TILT ANG

2.37

DEG

TILT AZIM

278.36

DEG

INCID ANG

65.37

DEG

EMISS ANG

5.44

DEG

PHASE ANG

69.80

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

4064

YR. MO. DY.
HR. MI. SEC

TIME 670515 S/C POSITION ALT 2972.87 KM
 TILT RT -0.1748 KM/SEC
 LAT -42.14 DEG
 LONG 40.27 DEG

S/C ORIENTATION TILT ANG 4.40 DEG
 TILT AZIM 96.60 DEG
 SWING ANG 294.32 DEG
 N.DEV. 24.65 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -43.71 DEG AB 310.6 KM
 A LONG -50.40 DEG BC 222.4 KM
 B LAT -50.78 DEG CD 016.8 KM
 B LONG -3.35 DEG DA 197.5 KM
 C LAT -62.19 DEG TILT DISTANCE
 C LONG -82.89 DEG 6.1
 D LAT 1.08 DEG
 D LONG -5.83 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -23.74 DEG AB 128.2 KM
 A LONG 47.44 DEG BC 291.9 KM
 B LAT -55.91 DEG CD 105.2 KM
 B LONG 74.86 DEG DA 280.1 KM
 C LAT -61.38 DEG TILT DISTANCE
 C LONG 59.50 DEG 48.9
 D LAT -27.20 DEG
 D LONG 37.92 DEG

MISSION/
FRAME NO.

4065

YR. MO. DY.
HR. MI. SEC

TIME 670515 S/C POSITION ALT 2735.08 KM
 TILT RT -0.0657 KM/SEC
 LAT -14.44 DEG
 LONG 42.95 DEG

S/C ORIENTATION TILT ANG 0.36 DEG
 TILT AZIM 143.31 DEG
 SWING ANG 328.79 DEG
 N.DEV. 5.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 17.42 DEG AB 453.3 KM
 A LONG 85.20 DEG BC 377.4 KM
 B LAT -29.68 DEG CD 423.2 KM
 B LONG 100.54 DEG DA 994.0 KM
 C LAT -38.50 DEG TILT DISTANCE
 C LONG -10.25 DEG 0.5
 D LAT 12.51 DEG
 D LONG -11.31 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.28 DEG AB 009.9 KM
 A LONG 45.87 DEG BC 254.2 KM
 B LAT -31.29 DEG CD 009.1 KM
 B LONG 50.14 DEG DA 252.8 KM
 C LAT -32.21 DEG TILT DISTANCE
 C LONG 40.32 DEG 3.8
 D LAT 1.48 DEG
 D LONG 37.56 DEG

PHOTO ILLUMINATION SUN AZIM 66.96 DEG
 INCID ANG 67.49 DEG
 EMISS ANG 12.00 DEG
 PHASE ANG 78.62 DEG
 ALPHA -11.20 DEG

PHOTO ILLUMINATION SUN AZIM 82.78 DEG
 INCID ANG 66.21 DEG
 EMISS ANG 0.93 DEG
 PHASE ANG 66.67 DEG
 ALPHA -0.47 DEG

PRINCIPAL POINT
 LATITUDE -42.56 DEG
 LONGITUDE 50.55 DEG

PRINCIPAL POINT
 LATITUDE -14.90 DEG
 LONGITUDE 43.30 DEG

LUNAR CRATER PHOTOGRAPHIC SUPPORT DATA

THE FIRST NUMBERED BY MYSELF AND SOON ANSWERED.

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S/C POSITION	S/C ORIENTATION	PHOTO ILLUM.
ALT	2730.75 KM	TIILT ANG 1.23 DEG
ALT RT	0.0612 KM/SEC	TIILT AZIM 258.31 DEG
LAT	13.87 DEG	SWING ANG 72.44 DEG
LONG	44.98 DEG	N.DEV. 354.57 DEG

THEORY AND PRACTICE

MEDIUM RESOLUTION		CORNER COORDINATE	SIDE LENGTH	TILT DISTANCE	HIGH FREQ.	
CORNER	COORDINATE				CORNER COORDINATE	COORDINATE
A	LAT 36°.76 DEG	AB	008°.5 KM		A	LAT 29°.66 DEG
A	LONG 112°.18 DEG	BC	976°.2 KM		A	LONG 49°.44 DEG
B	LAT -31°.48 DEG	CD	472°.2 KM		B	LAT -3°.84 DEG
B	LONG 90°.81 DEG	DA	422°.2 KM		B	LONG 45°.44 DEG
C	LAT -14°.56 DEG				C	LAT -34°.1 DEG
C	LONG -14°.54 DEG			1.7	C	LONG 37°.1 DEG
D	LAT 37°.26 DEG				D	LAT 30°.66 DEG
D	LONG -20°.69 DEG				D	LONG 39°.84 DEG

MISSION /
FRAME NO.*

S/C POSITION	S/C ORIENTATION	PHOTO ILLUM %
ALT	2.675-5.8 KM	100
ALT RT	0-17.55 KM/SEC	100
LAT	42-81 DEG	100
LONG	47-79 DEG	100
	NAD φ	100
	TILT ANG	1-76 DEG
	TI LT AZIM	108-11 DEG
	SWING ANG	271-73 DEG
	EMISS ANG	100
	PHASE ANG	100

MEDICAL EDUCATION

COORDINATE	SIDE	LENGTH	CORNER COORDINATE
16°22' DEG	AB	320.0 KM	A LAT 56.44
12°40' DEG	BC	662.2 KM	A LONG 71.08
16°23' DEG	CD	508.8 KM	B LAT 22.55
5°47' DEG	DA	664.3 KM	B LONG 50.15
14°48' DEG	TILT DISTANCE		C LAT 25.18
-2°58' DEG	2.4		C LONG 40.56
55.88 DEG			D LAT 60.62
-25.88 DEG			D LONG 55.34

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PRINCIPAL POINT
LATITUDE 13° 47' DEG.
LONGITUDE 43° 04' DEG.

THASSE AND

HIGH F LPHA		COORDIN ER	AT	29.66
DONG	49.46	AT	-3.81	
DONG	45.49	AT	-3.14	
DONG	37.10	AT	30.62	
DONG	39.87	AT	39.87	

HIGH RESOLUTION

OWNER	COORDINATE	AT
NG	29° 66'	49° 44'
NG	-3° 81'	-3° 14'
NG	45° 49'	37° 10'
NG	30° 56'	39° 87'

PRINCIPAL POINT
LATITUDE 41° 89' DEG
LONGITUDE 51° 64' DEG

PH4

卷之三

OWNER	COORDINATE	TIME
AT	56.44°N	56.44°E
DONG	71.08°N	71.08°E
AT	22.55°N	22.55°E
DONG	59.19°N	59.19°E
AT	25.18°N	25.18°E
DONG	40.56°N	40.56°E
AT	60.62°N	60.62°E
DONG	55.34°N	55.34°E

HIGH K
CROSS

56.44 DEG 4B 107.5 K

71-08

22.35
AT
DONG
50.19
AT
DONG
25.18
AT
DONG
40.56
AT
DONG
60.62
AT
DONG
55.34

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.4068
YR. MO. DY
HR. MI. SECTIME
67051E
064226.61

S/C POSITION
ALT RT 3487.77 KM
ALT RT 0.2457 KM/SEC
LAT 71° 63 DEG
LONG 57.12 DEG

N.DEV. 354.04 DEG
ALPHA 0.72 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 22° 55 DEG AB 886.9 KM
A LONG 145° 06 DEG BC 484.0 KM
B LAT 27° 08 DEG CD 471.7 KM
B LONG 115° 49 DEG DA 297.1 KM
C LAT 27° 77 DEG TILT DISTANCE
C LONG 120° 25 DEG Q.9
D LAT 32° 00 DEG
D LONG 130° 48 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 82.26 DEG AB 297.7 KM
A LONG 159.71 DEG BC 327.9 KM
B LAT 48.19 DEG CD 301.3 KM
B LONG 58.18 DEG DA 324.9 KM
C LAT 48.53 DEG TILT DISTANCE
C LONG 41.84 DEG G.9
D LAT 85.40 DEG
D LONG -81.35 DEGMISSION/
FRAME NO.4070
YR. MO. DY
HR. MI. SECTIME
670515
1:53:35.21

S/C POSITION
ALT 3456.53 KM
ALT RT -0.2471 KM/SEC
LAT -71.56 DEG
LONG 24.60 DEG

N.DEV. 9.52 DEG
ALPHA -9.69 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -43° 35 DEG AB 001.2 KM
A LONG -27° 76 DEG BC 266.2 KM
B LAT -46° 86 DEG CD 797.8 KM
B LONG -39.20 DEG DA 501.7 KM
C LAT -33° 55 DEG TILT DISTANCE
C LONG -78.98 DEG 5.1
D LAT -15° 16 DEG
D LONG -9.95 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -49.47 DEG AB 326.7 KM
A LONG 53.30 DEG BC 340.6 KM
B LAT -78.92 DEG CD 298.9 KM
B LONG 160.96 DEG DA 337.0 KM
C LAT -84.62 DEG TILT DISTANCE
C LONG -121.01 DEG 39.6
D LAT -51.06 DEG
D LONG 36.01 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION /

FRAME NO.

4071 TIME
YR. MO. DY
HR. MI. SECS/C POSITION
ALT RT -0.175 KM/SEC
LAT -42°22' DEG
LONG 33°74' DEGS/C ORIENTATION
TILT ANG 5°50' DEG
TILT AZIM 103°19' DEG
SWING ANG 301°12' DEG
N.DEV. 26°92' DEGPHOTO ILLUMINATION
SUN AZIM 54°69' DEG
INCID ANG 66°46' DEG
EMISS ANG 15°07' DEG
PHASE ANG 79°72' DEG
ALPHA -13°44' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 23°56' DEG	AB 312.2 KM
A LONG 42°45' DEG	BC 223.4 KM
B LAT -53°29' DEG	CD 940.5 KM
B LONG -8°28' DEG	DA 179.4 KM
C LAT -65°13' DEG	TILT DISTANCE 7°7'
C LONG -85°51' DEG	
D LAT 2°03' DEG	
D LONG -14°20' DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -25°11' DEG	AB 147.1 KM
A LONG 42°44' DEG	BC 391.2 KM
B LAT -56°46' DEG	CD 117.7 KM
B LONG 74°02' DEG	DA 280.8 KM
C LAT -62°58' DEG	TILT DISTANCE 58.8
C LONG 59°42' DEG	
D LAT -28°78' DEG	
D LONG 33°28' DEG	

MISSION /

FRAME NO.

4072 TIME
YR. MO. DY
HR. MI. SECS/C POSITION
ALT RT -0.0667 KM/SEC
LAT -14°56' DEG
LONG 36°35' DEGS/C ORIENTATION
TILT ANG 1°23' DEG
TILT AZIM 131°22' DEG
SWING ANG 316°23' DEG
N.DEV. 5°45' DEGPHOTO ILLUMINATION
SUN AZIM 82°16' DEG
INCID ANG 65°67' DEG
EMISS ANG 3°16' DEG
PHASE ANG 67°78' DEG
ALPHA -2°13' DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 17°03' DEG	AB 743.6 KM
A LONG 81°85' DEG	BC 475.4 KM
B LAT -29°16' DEG	CD 391.2 KM
B LONG 105°18' DEG	DA 531.3 KM
C LAT -39°26' DEG	TILT DISTANCE 1°7'
C LONG -14°29' DEG	
D LAT 22°78' DEG	
D LONG -17°98' DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1°28' DEG	AB 312.0 KM
A LONG 43°54' DEG	BC 255.6 KM
B LAT -32°35' DEG	CD 008.1 KM
B LONG 44°49' DEG	DA 251.6 KM
C LAT -33°20' DEG	TILT DISTANCE 73.0
C LONG 34°89' DEG	
D LAT 0°47' DEG	
D LONG 32.27' DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -25°11' DEG	AB 147.1 KM
A LONG 42°44' DEG	BC 391.2 KM
B LAT -56°46' DEG	CD 117.7 KM
B LONG 74°02' DEG	DA 280.8 KM
C LAT -62°58' DEG	TILT DISTANCE 58.8
C LONG 59°42' DEG	
D LAT -28°78' DEG	
D LONG 33°28' DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -25°11' DEG	AB 147.1 KM
A LONG 42°44' DEG	BC 391.2 KM
B LAT -56°46' DEG	CD 117.7 KM
B LONG 74°02' DEG	DA 280.8 KM
C LAT -62°58' DEG	TILT DISTANCE 58.8
C LONG 59°42' DEG	
D LAT -28°78' DEG	
D LONG 33°28' DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -25°11' DEG	AB 147.1 KM
A LONG 42°44' DEG	BC 391.2 KM
B LAT -56°46' DEG	CD 117.7 KM
B LONG 74°02' DEG	DA 280.8 KM
C LAT -62°58' DEG	TILT DISTANCE 58.8
C LONG 59°42' DEG	
D LAT -28°78' DEG	
D LONG 33°28' DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

C4/10/71

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MISSION/
FRAME NO.

4073 YR, MO, DY 670515 S/C POSITION ALT 2726.56 KM TILT ANG 0.94 DEG SUN AZIM 95.43 DEG PRINCIPAL POINT LATITUDE 12.53 DEG HR, MI, SEC 173445.71 ALT RT C-3605 KM/SEC TILT AZIM 209.36 DEG LONGITUDE 37.59 DEG SWING ANG 23.15 DEG EMISS ANG 2.41 DEG N-DEV. 353.94 DEG PHASE ANG 64.12 DEG ALPHA 2.93 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 33.03 DEG AB 595.4 KM
 A LONG 105.34 DEG BC 436.4 KM
 B LAT -20.88 DEG CD 497.2 KM
 B LONG 75.48 DEG DA 483.3 KM
 C LAT -15.10 DEG TILT DISTANCE
 C LONG -15.55 DEG 1.3
 D LAT 41.94 DEG
 D LONG -30.42 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 28.53 DEG AB 005.7 KM
 A LONG 44.20 DEG BC 254.7 KM
 B LAT -4.93 DEG CD 038.3 KM
 B LONG 39.95 DEG DA 250.8 KM
 C LAT -4.10 DEG TILT DISTANCE
 C LONG 31.55 DEG 10.0
 D LAT 29.52 DEG
 D LONG 34.79 DEG

MISSION/
FRAME NO.

4074 YR, MO, DY 670515 S/C POSITION ALT 2569.80 KM TILT ANG 2.30 DEG SUN AZIM 113.20 DEG PRINCIPAL POINT LATITUDE 4.0.72 DEG HR, MI, SEC 1810 0.21 ALT RT 0-1752 KM/SEC TILT AZIM 119.86 DEG LONGITUDE 45.57 DEG SWING ANG 283.01 DEG EMISS ANG 6.25 DEG N-DEV. 340.30 DEG PHASE ANG 70.94 DEG ALPHA -6.16 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 12.93 DEG AB 325.1 KM
 A LONG 55.57 DEG BC 545.5 KM
 B LAT 4.28 DEG CD 937.7 KM
 B LONG 92.53 DEG DA 264.4 KM
 C LAT C.41 DEG TILT DISTANCE
 C LONG -15.80 DEG 3.2
 D LAT 56.22 DEG
 D LONG -71.80 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 55.03 DEG AB 108.2 KM
 A LONG 64.71 DEG BC 280.2 KM
 B LAT 21.24 DEG CD 096.2 KM
 B LONG 43.90 DEG DA 277.3 KM
 C LAT 24.09 DEG TILT DISTANCE
 C LONG 34.36 DEG 24.5
 D LAT 59.28 DEG
 D LONG 49.69 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION /
FRAME NO.

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
670515 2321 4.21	ALT RT 0.0127 LAT 0.06 LONG -145.96	6126.79 KM/SEC TILT AZIM 1.43 DEG SWING ANG 1.11 DEG N.DEV.	SUN AZIM 272.48 DEG INCID ANG 114.83 DEG EMISS ANG 5.43 DEG PHASE ANG 114.82 DEG	LATITUDE 4.29 DEG LONGITUDE -145.86 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	DEG
A LAT	0° LONG	AB 0°
A LONG	0° LAT	BC 0°
B LAT	0° LONG	CD 0°
B LONG	0° LAT	DA 0°
C LAT	0° LONG	DEG TILT DIST
C LONG	0° LAT	DEG 1.6
D LAT	0° LONG	DEG
D LONG	0°	DEG

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A	LAT -36-05 DEG	AB 42
A	LONG -157-98 DEG	BC 61
B	LAT -36-05 DEG	CD 52

	HIGH RESOLUTION	SIDE LENGTH
CORNER	COORDINATE	
A LAT	-36.05 DEG	AB 427.5 KM
A LONG	-157.98 DEG	BC 619.3 KM
B LAT	52.57 DEG	CD 428.4 KM
B LONG	-162.57 DEG	DA 582.4 KM
C LAT	52.48 DEG	TILT DISTANCE
C LONG	-128.47 DEG	12.7
D LAT	-36.15 DEG	
D LONG	-134.02 DEG	

MISSION /
FRAME NO.
4076 YR. 1964
10-11

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	2971.56 KM	TILT ANG 4°54' DEG	SUN AZIM 67.20 DEG
ALT RT	-0.1771 KM/SEC	TILT AZIM 97.68 DEG	INCID ANG 67.89 DEG
LAT	-42°21' DEG	SWING ANG 295.73 DEG	EMISS ANG 12.40 DEG
LONG	27°23' DEG	N.DEV. 25°25' DEG	PHASE ANG 79.35 DEG
			ALPHA -11°53' DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		AB 304.2 BC 222.3 CD 958.0 DA 308.7
A LAT	-44.25 DEG	
A LONG	-13.27 DEG	
B LAT	-51.32 DEG	
B LONG	-16.24 DEG	
C LAT	-64.24 DEG	TIILT DIST
C LONG	-92.80 DEG	6.3
D LAT	-0.09 DEG	
D LONG	-2° 0' 0" DEC	

HIGH RESOLUTION		SIDE LENGTH	ANGLE	TILT DISTANCE
CORNER	COORDINATE			
A LAT	-24°.02 DEG	AB	130.0 KM	
A LONG	34°.55 DEG	BC	292.9 KM	
B LAT	-55°.96 DEG	CD	106.3 KM	
B LONG	62°.69 DEG	DA	280.0 KM	
C LAT	-61°.57 DEG			
C LONG	47°.39 DEG			
D LAT	-27°.54 DEG			
D LONG	106°.37 DEG			

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.4077
YR. MO. DY
HR. MI. SEC

S/C POSITION
TIME
ALT RT -0.0577 KM/SEC
LAT -14.46 DEG
LONG 29.77 DEG

S/C ORIENTATION
TILT ANG 0.38 DEG
TILT AZIM 141.14 DEG
SWING ANG 326.93 DEG
N.DEV. 5.79 DEG

MISSION/
FRAME NO.

4078

S/C POSITION
TIME
ALT RT 0.0599 KM/SEC
LAT 13.86 DEG
LONG 31.68 DEG

S/C ORIENTATION
TILT ANG 0.98 DEG
TILT AZIM 248.54 DEG
SWING ANG 63.19 DEG
N.DEV. 354.97 DEG

MISSION/
FRAME NO.

4079

S/C POSITION
TIME
ALT RT 0.0599 KM/SEC
LAT 13.86 DEG
LONG 31.68 DEG

S/C ORIENTATION
TILT ANG 0.98 DEG
TILT AZIM 248.54 DEG
SWING ANG 63.19 DEG
N.DEV. 354.97 DEG

MISSION/
FRAME NO.

4080

S/C POSITION
TIME
ALT RT 0.0599 KM/SEC
LAT 13.86 DEG
LONG 31.68 DEG

S/C ORIENTATION
TILT ANG 0.98 DEG
TILT AZIM 248.54 DEG
SWING ANG 63.19 DEG
N.DEV. 354.97 DEG

MISSION/
FRAME NO.

4077

S/C POSITION
TIME
ALT RT -0.0577 KM/SEC
LAT -14.46 DEG
LONG 29.77 DEG

S/C ORIENTATION
TILT ANG 0.38 DEG
TILT AZIM 141.14 DEG
SWING ANG 326.93 DEG
N.DEV. 5.79 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 17.43 DEG AB 449.8 KM
A LONG 71.80 DEG BC 370.3 KM
B LAT -29.51 DEG CD 417.3 KM
B LONG 67.64 DEG DA 029.3 KM
C LAT -38.63 DEG TILT DISTANCE 0.5
C LONG -22.96 DEG
D LAT 15.63 DEG
D LONG -25.68 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.22 DEG AB 007.9 KM
A LONG 32.65 DEG BC 253.7 KM
B LAT -31.26 DEG CD 006.9 KM
B LONG 37.95 DEG DA 252.2 KM
C LAT -32.21 DEG TILT DISTANCE 4.0
C LONG 27.26 DEG
D LAT 1.40 DEG
D LONG 24.36 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.30 DEG AB 03.0 KM
A LONG 36.51 DEG BC 253.6 KM
B LAT -3.93 DEG CD 057.0 KM
B LONG 32.81 DEG DA 251.5 KM
C LAT -3.30 DEG TILT DISTANCE 1.3
C LONG 24.45 DEG
D LAT 3.74 DEG
D LONG 26.97 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 1.30 DEG AB 03.1 KM
A LONG 36.51 DEG BC 253.6 KM
B LAT -3.93 DEG CD 057.0 KM
B LONG 32.81 DEG DA 251.5 KM
C LAT -3.30 DEG TILT DISTANCE 1.4
C LONG 24.45 DEG
D LAT 3.74 DEG
D LONG 26.97 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 83.02 DEG LATITUDE -14.93 DEG
INCID ANG 67.08 DEG LONGITUDE 30.15 DEG
EMISS ANG 9.98 DEG
PHASE ANG 67.60 DEG
ALPHA -1.52 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 95.43 DEG LATITUDE 13.30 DEG
INCID ANG 66.36 DEG LONGITUDE 30.21 DEG
EMISS ANG 2.51 DEG
PHASE ANG 64.13 DEG
ALPHA 2.22 DEG

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MISSION/
FRAME NO.

4079 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.HD.DY 676516 ALT 2963.81 KM TILT ANG 2.11 DEG SUN AZIM 113.35 DEG LATITUDE 41.83 DEG
 HR.MI.SEC 061130.51 ALT RT 0.1750 KM/SEC TILT AZIM 103.79 DEG INCID ANG 55.50 DEG
 LAT 42.79 DEG SWING ANG 268.57 DEG EMISS ANG 5.73 DEG
 LONG 34.33 DEG N.DEV. 341.18 DEG PHASE ANG 71.20 DEG
 ALPHA -5.70 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 15.47 DEG AB 316.3 KM
 A LONG 53.85 DEG BC 492.3 KM
 B LAT 8.06 DEG CD 217.3 KM
 B LONG 86.33 DEG DA 215.7 KM
 C LAT 2.63 DEG TILT DISTANCE 2.9
 C LONG -20.31 DEG
 D LAT 57.82 DEG
 D LONG -74.43 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT 56.45 DEG AB 154.6 KM
 A LONG 59.55 DEG BC 277.6 KM
 B LAT 22.65 DEG CD 93.4 KM
 B LONG 37.69 DEG DA 278.0 KM
 C LAT 25.30 DEG TILT DISTANCE 22.5
 C LONG 28.08 DEG
 D LAT 60.59 DEG
 D LONG 42.79 DEG

MISSION/
FRAME NO.

4080 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.HD.DY 67C516 ALT 3479.07 KM TILT ANG 0.84 DEG SUN AZIM 128.92 DEG LATITUDE 79.45 DEG
 HR.MI.SEC 0651 7.01 ALT RT 0.2465 KM/SEC TILT AZIM 147.04 DEG INCID ANG 76.95 DEG
 LAT 71.89 DEG SWING ANG 322.70 DEG EMISS ANG 2.53 DEG
 LONG 43.34 DEG N.DEV. 353.08 DEG PHASE ANG 79.33 DEG
 ALPHA -2.37 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 36.49 DEG AB 424.6 KM
 A LONG -41.55 DEG BC 297.2 KM
 B LAT 31.69 DEG CD 351.5 KM
 B LONG -31.23 DEG DA 811.2 KM
 C LAT 30.95 DEG TILT DISTANCE 1.1
 C LONG -30.48 DEG
 D LAT 28.86 DEG
 D LONG -61.26 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT 81.89 DEG AB 299.3 KM
 A LONG 146.07 DEG BC 328.6 KM
 B LAT 47.47 DEG CD 295.3 KM
 B LONG 50.36 DEG DA 323.2 KM
 C LAT 48.24 DEG TILT DISTANCE 8.9
 C LONG 34.21 DEG
 D LAT 86.23 DEG
 D LONG -87.99 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 56.45 DEG AB 154.6 KM
 A LONG 59.55 DEG BC 277.6 KM
 B LAT 22.65 DEG CD 93.4 KM
 B LONG 37.69 DEG DA 278.0 KM
 C LAT 25.30 DEG TILT DISTANCE 22.5
 C LONG 28.08 DEG
 D LAT 60.59 DEG
 D LONG 42.79 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT 56.45 DEG AB 154.6 KM
 A LONG 59.55 DEG BC 277.6 KM
 B LAT 22.65 DEG CD 93.4 KM
 B LONG 37.69 DEG DA 278.0 KM
 C LAT 25.30 DEG TILT DISTANCE 22.5
 C LONG 28.08 DEG
 D LAT 60.59 DEG
 D LONG 42.79 DEG

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MISSION/
FRAME NO.

4082
YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	670CE15	350°.94 KM	TILT ANG 3°.12 DEG	SUN AZIM 59°.38 DEG	LATITUDE -72°.37 DEG
ALT RT	155637.91	0.2490 KM/SEC	TILT AZIM 196°.45 DEG	INCID ANG 81°.29 DEG	LONGITUDE 32°.47 DEG
LAT		-71°.62 DEG	SWING ANG 272°.99 DEG	EMISS ANG 9°.44 DEG	
LONG		12°.04 DEG	N.DEV. 5°.94 DEG	PHASE ANG 89°.67 DEG	
				ALPHA -8°.41 DEG	

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT	-41°.C1 DEG	AB 669.3 KM	CORNER COORDINATE
A LONG	-41°.47 DEG	BC 270.4 KM	A LAT -49°.25 DEG
B LAT	-44°.60 DEG	CD 825.1 KM	A LONG 38°.62 DEG
B LONG	-52°.64 DEG	DA 794.5 KM	B LAT -80°.35 DEG
C LAT	-28°.23 DEG	TILT DISTANCE	B LONG 148°.64 DEG
C LONG	-51°.86 DEG	4.3	C LAT -84°.55 DEG
D LAT	-5°.54 DEG		C LONG -121°.73 DEG
D LONG	-25°.27 DEG		D LAT -50°.43 DEG
			D LONG 21°.50 DEG

MISSION/
FRAME NO.

4083
YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	670CE16	2971°.86 KM	TILT ANG 5°.15 DEG	SUN AZIM 66°.27 DEG	LATITUDE -42°.95 DEG
ALT RT	163652.11	-0.1786 KM/SEC	TILT AZIM 98°.70 DEG	INCID ANG 67°.24 DEG	LONGITUDE 32°.82 DEG
LAT		-42°.23 DEG	SWING ANG 297°.06 DEG	EMISS ANG 14°.08 DEG	
LONG		20°.71 DEG	N.DEV. 26°.58 DEG	PHASE ANG 80°.18 DEG	
				ALPHA -13°.04 DEG	

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT	-45°.29 DEG	AB 278.2 KM	CORNER COORDINATE
A LONG	-18°.22 DEG	BC 221.3 KM	A LAT -24°.26 DEG
B LAT	-52°.36 DEG	CD 028.9 KM	A LONG 29°.09 DEG
B LONG	-21°.C7 DEG	DA 170.1 KM	B LAT -55°.74 DEG
C LAT	-63°.56 DEG	TILT DISTANCE	B LONG 58°.88 DEG
C LONG	-106°.82 DEG	7.2	C LAT -61°.68 DEG
D LAT	-1°.21 DEG		C LONG 43°.69 DEG
D LONG	-27°.78 DEG		D LAT -27°.96 DEG
			D LONG 19°.59 DEG

MISSION/
FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	670CE16	2971°.86 KM	TILT ANG 5°.15 DEG	SUN AZIM 66°.27 DEG	LATITUDE -42°.95 DEG
ALT RT	163652.11	-0.1786 KM/SEC	TILT AZIM 98°.70 DEG	INCID ANG 67°.24 DEG	LONGITUDE 32°.82 DEG
LAT		-42°.23 DEG	SWING ANG 297°.06 DEG	EMISS ANG 14°.08 DEG	
LONG		20°.71 DEG	N.DEV. 26°.58 DEG	PHASE ANG 80°.18 DEG	
				ALPHA -13°.04 DEG	

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT	-45°.29 DEG	AB 278.2 KM	CORNER COORDINATE
A LONG	-18°.22 DEG	BC 221.3 KM	A LAT -24°.26 DEG
B LAT	-52°.36 DEG	CD 028.9 KM	A LONG 29°.09 DEG
B LONG	-21°.C7 DEG	DA 170.1 KM	B LAT -55°.74 DEG
C LAT	-63°.56 DEG	TILT DISTANCE	B LONG 58°.88 DEG
C LONG	-106°.82 DEG	7.2	C LAT -61°.68 DEG
D LAT	-1°.21 DEG		C LONG 43°.69 DEG
D LONG	-27°.78 DEG		D LAT -27°.96 DEG
			D LONG 19°.59 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.4085
YR. MO. DY
HR. MI. SEC
67C916
173549.71TIME
S/C POSITION
ALT RT 2716.93 KM
LAT 0.0587 MN/SEC
LONG 13.88 DEG
N.DEV. 25.04 DEGS/C ORIENTATION
TILT ANG 0.89 DEG
SWING ANG 230.27 DEG
N.DEV. 354.22 DEGPHOTO ILLUMINATION
SUN AZIM 95.24 DEG.
INCID ANG 66.48 DEG
EMISS ANG 2.28 DEG
PHASE ANG 64.88 DEG
ALPHA 1.59 DEGPRINCIPAL POINT
LATITUDE -12.99 DEG.
LONGITUDE 23.94 DEGMISSION/
FRAME NO.4084
YR. MO. DY
HR. MI. SEC
67C916
170550.81TIME
S/C POSITION
ALT RT -0.691 KM/SEC
LAT -14.45 DEG
LONG 23.18 DEGS/C ORIENTATION
TILT ANG 124.97 DEG
SWING ANG 310.41 DEG
N.DEV. 5.74 DEGPHOTO ILLUMINATION
SUN AZIM 82.82 DEG
INCID ANG 66.38 DEG
EMISS ANG 2.12 DEG
PHASE ANG 63.47 DEG
ALPHA -1.59 DEGPRINCIPAL POINT
LATITUDE -15.19 DEG.
LONGITUDE 24.28 DEGMISSION/
FRAME NO.4084
YR. MO. DY
HR. MI. SEC
67C916
170550.81TIME
S/C POSITION
ALT RT -0.691 KM/SEC
LAT -14.45 DEG
LONG 23.18 DEGS/C ORIENTATION
TILT ANG 124.97 DEG
SWING ANG 310.41 DEG
N.DEV. 5.74 DEGPHOTO ILLUMINATION
SUN AZIM 82.82 DEG
INCID ANG 66.38 DEG
EMISS ANG 2.12 DEG
PHASE ANG 63.47 DEG
ALPHA -1.59 DEGPRINCIPAL POINT
LATITUDE -15.19 DEG.
LONGITUDE 24.28 DEGMISSION/
FRAME NO.4085
YR. MO. DY
HR. MI. SEC
67C916
173549.71TIME
S/C POSITION
ALT RT 2716.93 KM
LAT 0.0587 MN/SEC
LONG 13.88 DEG
N.DEV. 25.04 DEGS/C ORIENTATION
TILT ANG 0.89 DEG
SWING ANG 44.26 DEG
N.DEV. 354.22 DEGPHOTO ILLUMINATION
SUN AZIM 95.24 DEG.
INCID ANG 66.48 DEG
EMISS ANG 2.28 DEG
PHASE ANG 64.88 DEG
ALPHA 1.59 DEGPRINCIPAL POINT
LATITUDE 12.99 DEG.
LONGITUDE 23.94 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 1.91 DEG	AB 140.3 KM	A LAT 1.91 DEG	AB 140.3 KM
A LONG 26.84 DEG	AC 254.1 KM	A LONG 26.84 DEG	AC 254.1 KM
B LAT -31.59 DEG	BC 275.4 KM	B LAT -31.59 DEG	BC 275.4 KM
B LONG 31.26 DEG	BD 251.6 KM	B LONG 31.26 DEG	BD 251.6 KM
C LAT -32.49 DEG	CD 214.1 KM	C LAT -32.49 DEG	CD 214.1 KM
C LONG 21.41 DEG	CA 251.6 KM	C LONG 21.41 DEG	CA 251.6 KM
D LAT 1.06 DEG	DA 251.6 KM	D LAT 1.06 DEG	DA 251.6 KM
D LONG 18.57 DEG		D LONG 18.57 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 1.91 DEG	AB 140.3 KM	A LAT 1.91 DEG	AB 140.3 KM
A LONG 26.84 DEG	AC 254.1 KM	A LONG 26.84 DEG	AC 254.1 KM
B LAT -31.59 DEG	BC 275.4 KM	B LAT -31.59 DEG	BC 275.4 KM
B LONG 31.26 DEG	BD 251.6 KM	B LONG 31.26 DEG	BD 251.6 KM
C LAT -32.49 DEG	CD 214.1 KM	C LAT -32.49 DEG	CD 214.1 KM
C LONG 21.41 DEG	CA 251.6 KM	C LONG 21.41 DEG	CA 251.6 KM
D LAT 1.06 DEG	DA 251.6 KM	D LAT 1.06 DEG	DA 251.6 KM
D LONG 18.57 DEG		D LONG 18.57 DEG	

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MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4086 YR. MO. DY HR. MI. SEC	57CE16 1613 0.31	ALT RT 2956.1 KM 0.1744 KM/SEC LAT 42.80 DEG LONG 27.61 DEG	TILT ANG 1.90 DEG TILT AZIM 122.57 DEG SWING ANG 285.75 DEG N.DEV. 341.36 DEG	SUN AZIM 211.57 DEG INCID ANG 66.34 DEG EMISS ANG 5.13 DEG PHASE ANG 71.35 DEG ALPHA -5.92 DEG	LATITUDE 41.02 DEG LONGITUDE 31.25 DEG
MEDIUM RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 17.27 DEG	AB 259.5 KM	A LAT 55.56 DEG	AB 105.9 KM		
A LONG 55.22 DEG	BC 643.7 KM	A LONG 49.84 DEG	BC 277.9 KM		
B LAT -5.82 DEG	CD 495.0 KM	B LAT 21.73 DEG	CD 391.2 KM		
B LONG 76.03 DEG	DA 211.4 KM	B LONG 29.89 DEG	DA 275.1 KM		
C LAT 13.27 DEG	TILT DISTANCE 2.6	C LAT 24.34 DEG	TILT DISTANCE 20.2		
C LONG -22.66 DEG		C LONG 29.34 DEG			
D LAT 57.54 DEG		D LAT 59.58 DEG			
D LONG -80.97 DEG		D LONG 34.59 DEG			
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 17.27 DEG	AB 105.9 KM	A LAT 55.56 DEG	AB 105.9 KM		
A LONG 55.22 DEG	BC 277.9 KM	A LONG 49.84 DEG	BC 277.9 KM		
B LAT -5.82 DEG	CD 391.2 KM	B LAT 21.73 DEG	CD 391.2 KM		
B LONG 76.03 DEG	DA 275.1 KM	B LONG 29.89 DEG	DA 275.1 KM		
C LAT 13.27 DEG	TILT DISTANCE 2.6	C LAT 24.34 DEG	TILT DISTANCE 20.2		
C LONG -22.66 DEG		C LONG 29.34 DEG			
D LAT 57.54 DEG		D LAT 59.58 DEG			
D LONG -80.97 DEG		D LONG 34.59 DEG			
MEDIUM RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 144.51 DEG	AB 303.3 KM	A LAT 23.94 DEG	AB 131.0 KM		
A LONG -86.22 DEG	BC 222.2 KM	A LONG 21.45 DEG	BC 291.4 KM		
B LAT -51.59 DEG	CD 544.3 KM	B LAT -55.72 DEG	CD 167.0 KM		
B LONG -25.11 DEG	DA 278.1 KM	B LONG 49.93 DEG	DA 280.4 KM		
C LAT -65.22 DEG	TILT DISTANCE 6.4	C LAT -61.44 DEG	TILT DISTANCE 4.9+0		
C LONG -105.14 DEG		C LONG 34.82 DEG			
D LAT 31.05 DEG		D LAT -27.54 DEG			
D LONG -27.62 DEG		D LONG 11.96 DEG			
HIGH RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 144.51 DEG	AB 303.3 KM	A LAT 23.94 DEG	AB 131.0 KM		
A LONG -86.22 DEG	BC 222.2 KM	A LONG 21.45 DEG	BC 291.4 KM		
B LAT -51.59 DEG	CD 544.3 KM	B LAT -55.72 DEG	CD 167.0 KM		
B LONG -25.11 DEG	DA 278.1 KM	B LONG 49.93 DEG	DA 280.4 KM		
C LAT -65.22 DEG	TILT DISTANCE 6.4	C LAT -61.44 DEG	TILT DISTANCE 4.9+0		
C LONG -105.14 DEG		C LONG 34.82 DEG			
D LAT 31.05 DEG		D LAT -27.54 DEG			
D LONG -27.62 DEG		D LONG 11.96 DEG			

MISSION/
FRAME NO.

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT	
4088 YR. MO. DY HR. MI. SEC	670517 343638.21	ALT RT 2973.34 KM -0.1804 KM/SEC LAT -42.26 DEG LONG 14.18 DEG	TILT ANG 4.59 DEG TILT AZIM 96.82 DEG SWING ANG 295.32 DEG N.DEV. 25.77 DEG	SUN AZIM 67.75 DEG INCID ANG 68.24 DEG EMISS ANG 12.53 DEG PHASE ANG 80.04 DEG ALPHA -17.76 DEG	LATITUDE -42.71 DEG LONGITUDE 24.94 DEG
MEDIUM RESOLUTION					
CORNER COORDINATE SIDE LENGTH					
A LAT 144.51 DEG	AB 303.3 KM	A LAT 23.94 DEG	AB 131.0 KM		
A LONG -86.22 DEG	BC 222.2 KM	A LONG 21.45 DEG	BC 291.4 KM		
B LAT -51.59 DEG	CD 544.3 KM	B LAT -55.72 DEG	CD 167.0 KM		
B LONG -25.11 DEG	DA 278.1 KM	B LONG 49.93 DEG	DA 280.4 KM		
C LAT -65.22 DEG	TILT DISTANCE 6.4	C LAT -61.44 DEG	TILT DISTANCE 4.9+0		
C LONG -105.14 DEG		C LONG 34.82 DEG			
D LAT 31.05 DEG		D LAT -27.54 DEG			
D LONG -27.62 DEG		D LONG 11.96 DEG			

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MISSION/
FRAME NO.4089
YR,MD,DY
HR,MI,SEC

		TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		670817	ALT	2724.42 KM	TILT ANG	0.45 DEG	SUN AZIM	83.23 DEG	LATITUDE	-15.09 DEG
		051044.31	ALT RT	-0.0710 KM/SEC	TIILT AZIM	154.35 DEG	INCID ANG	68.08 DEG	LONGITUDE	16.90 DEG
			LAT	-14.45 DEG	SWING ANG	340.12 DEG	EMISS ANG	1.16 DEG		
			LONG	16.59 DEG	N.DEV.	5.86 DEG	PHASE ANG	68.46 DEG		
						ALPHA				

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION		CORNER COORDINATE		SIDE LENGTH
A LAT	16.81 DEG	AB 442.8 KM	A LAT	2.00 DEG	AB 065.9 KM	A LAT	2.00 DEG
A LONG	57.82 DEG	BC 369.9 KM	A LONG	19.37 DEG	BC 253.4 KM	B LAT	-31.42 DEG
B LAT	-25.67 DEG	CD 418.6 KM	B LONG	23.01 DEG	CD 005.2 KM	C LAT	-32.37 DEG
B LONG	74.24 DEG	DA 972.3 KM	C LONG	14.02 DEG	DA 251.5 KM	C LONG	14.02 DEG
C LAT	-38.52 DEG	TILT DISTANCE 0.6	D LAT	1.17 DEG	TILT DISTANCE 4.8	D LAT	1.17 DEG
C LONG	-36.80 DEG		D LONG	11.10 DEG		D LONG	11.10 DEG
D LAT	18.54 DEG						
D LONG	-37.40 DEG						

MISSION/
FRAME NO.4090
YR,MD,DY
HR,MI,SEC

		TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		670517	ALT	2711.29 KM	TILT ANG	1.57 DEG	SUN AZIM	95.02 DEG	LATITUDE	13.75 DEG
		054134.61	ALT RT	0.0572 KM/SEC	TIILT AZIM	266.96 DEG	INCID ANG	68.43 DEG	LONGITUDE	15.87 DEG
			LAT	13.89 DEG	SWING ANG	81.96 DEG	EMISS ANG	4.03 DEG		
			LONG	18.40 DEG	N.DEV.	355.59 DEG	PHASE ANG	64.44 DEG		
						ALPHA				

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION		CORNER COORDINATE		SIDE LENGTH
A LAT	39.30 DEG	AB 022.6 KM	A LAT	29.96 DEG	AB 997.9 KM	A LONG	21.89 DEG
A LONG	86.83 DEG	BC 974.3 KM	B LAT	-3.30 DEG	BC 252.7 KM	B LONG	1B.56 DEG
B LAT	-31.58 DEG	CD 421.9 KM	C LAT	-2.81 DEG	CD 004.9 KM	C LONG	10.22 DEG
B LONG	63.56 DEG	DA 469.5 KM	D LAT	30.78 DEG	DA 251.7 KM	D LONG	12.30 DEG
C LAT	-14.01 DEG	TILT DISTANCE 2.1					
C LONG	-41.53 DEG						
D LAT	35.43 DEG						
D LONG	-52.09 DEG						

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MISSION/
FRAME NO.4091
YR.MD.DY
HR.MI.SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	670517	ALT 2947.29 KM ALT RT 0.1736 KM/SEC LAT 42.80 DEG LONG 20.90 DEG	TILT ANG 2.14 DEG TILT AZIM 100.54 DEG SWING ANG 265.21 DEG N.DEV. 341.48 DEG	SUN AZIM 112.55 DEG INCID ANG. 66.30 DEG EMISS ANG 5.78 DEG PHASE ANG 72.01 DEG ALPHA -5.72 DEG	LATITUDE 42.03 DEG LONGITUDE 25.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 16.30 DEG	AB 313.3 KM
A LONG 80.32 DEG	BC 468.1 KM
B LAT 5.07 DEG	CD 229.2 KM
B LONG 72.72 DEG	DA 277.8 KM
C LAT 0.82 DEG	TILT DISTANCE 2.9
C LONG -33.74 DEG	
D LAT 56.27 DEG	
D LONG -91.64 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 55.66 DEG	AB 098.4 KM
A LONG 45.11 DEG	BC 275.7 KM
B LAT 23.00 DEG	CD 087.1 KM
B LONG 24.49 DEG	DA 276.7 KM
C LAT 25.58 DEG	TILT DISTANCE 22.8
C LONG 14.90 DEG	
D LAT 60.72 DEG	
D LONG 29.28 DEG	

MISSION/
FRAME NO.4092
YR.MD.DY
HR.MI.SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	670517	ALT 3457.20 KM ALT RT 0.2469 KM/SEC LAT 71.92 DEG LONG 29.48 DEG	TILT ANG 0.58 DEG TILT AZIM 129.79 DEG SWING ANG 306.46 DEG N.DEV. 354.09 DEG	SUN AZIM 127.43 DEG INCID ANG 77.79 DEG EMISS ANG 1.73 DEG PHASE ANG 79.51 DEG ALPHA -1.72 DEG	LATITUDE 71.16 DEG LONGITUDE 32.23 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 15.80 DEG	AB 872.7 KM
A LONG 114.76 DEG	BC 293.3 KM
B LAT 32.42 DEG	CD 986.2 KM
B LONG -44.73 DEG	DA 816.3 KM
C LAT 16.05 DEG	TILT DISTANCE 0.8
C LONG -39.03 DEG	
D LAT 27.86 DEG	
D LONG -74.83 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 82.08 DEG	AB 289.1 KM
A LONG 138.66 DEG	BC 324.5 KM
B LAT 48.57 DEG	CD 285.8 KM
B LONG 37.12 DEG	DA 322.1 KM
C LAT 49.21 DEG	TILT DISTANCE 6.1
C LONG 20.80 DEG	
D LAT 85.60 DEG	
D LONG -104.66 DEG	

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MISSION/ FRAME NO.	TIME YR.MD.DY HR.MI.SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION TILT ANG TILT AZIM SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG	PRINCIPAL POINT LATITUDE LONGITUDE
4094	670517 160033.41	ALT 3516.02 KM RT -0.2515 KM/SEC LAT -71.70 DEG LONG -0.67 DEG	3*17 DEG TILT AZIM 103.51 DEG SWING ANG 270.54 DEG N.DEV. 5.79 DEG	59.44 DEG 81.19 DEG 9.62 DEG 89.98 DEG	-72.11 DEG 20.19 DEG
MEDIUM RESOLUTION					
MISSION/ FRAME NO.	TIME YR.MD.DY HR.MI.SEC	CORNER COORDINATE A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	SIDE LENGTH AB 084.3 KM BC 271.3 KM CD 868.5 KM DA 824.3 KM TILT DISTANCE 4.4	HIGH RESOLUTION CORNER COORDINATE A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	SIDE LENGTH AB 329.4 KM BC 337.8 KM CD 305.6 KM DA 337.5 KM TILT DISTANCE 33.6
4095	670517 160033.41	ALT 2975.52 KM RT -0.1624 KM/SEC LAT -42.27 DEG LONG 7.64 DEG	TILT ANG 4.71 DEG TILT AZIM 95.63 DEG SWING ANG 293.90 DEG N.DEV. 25.69 DEG	SUN AZIM 67.90 DEG INCID ANG 68.38 DEG EMISS ANG 12.87 DEG PHASE ANG 80.50 DEG	PRINCIPAL POINT LATITUDE LONGITUDE
MEDIUM RESOLUTION					
MISSION/ FRAME NO.	TIME YR.MD.DY HR.MI.SEC	CORNER COORDINATE A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	SIDE LENGTH AB 297.3 KM BC 221.6 KM CD 034.7 KM DA 228.3 KM TILT DISTANCE 6.5	HIGH RESOLUTION CORNER COORDINATE A LAT A LONG B LAT B LONG C LAT C LONG D LAT D LONG	SIDE LENGTH AB 132.6 KM BC 294.3 KM CD 107.6 KM DA 281.4 KM TILT DISTANCE 50.3

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MISSION/
FRAME NO.

4096 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT RT TILT ANG SUN AZIM LATITUDE
 HR, MI, SEC 170517 2722.28 KM TILT AZIM 138.22 DEG 83.22 DEG -15.18 DEG
 LAT -0.0732 KM/SEC SWING ANG 323.90 DEG INCID ANG 66.20 DEG LONGITUDE 10.67 DEG
 LONG -14.45 DEG N.DEV. 5.86 DEG EMISS ANG 1.60 DEG
 9.99 DEG PHASE ANG 69.13 DEG ALPHA -0.93 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 17.05 DEG AB 464.2 KM
 A LONG 52.33 DEG BC 384.2 KM
 B LAT -29.73 DEG CD 403.8 KM
 B LONG 70.28 DEG DA 007.5 KM
 C LAT -38.54 DEG TILT DISTANCE
 C LONG -41.87 DEG 0.8
 D LAT 20.10 DEG
 D LONG -44.59 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.89 DEG AB 005.8 KM
 A LONG 13.15 DEG BC 253.4 KM
 B LAT -31.52 DEG CD 084.1 KM
 B LONG 17.62 DEG DA 251.2 KM
 C LAT -32.46 DEG TILT DISTANCE
 C LONG 7.81 DEG 6.6
 D LAT 1.05 DEG
 D LONG 4.90 DEG ALPHA

MISSION/
FRAME NO.

4097 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT RT TILT ANG SUN AZIM LATITUDE
 HR, MI, SEC 170517 2705.31 KM TILT AZIM 245.81 DEG 94.67 DEG -12.97 DEG
 LAT 0.0554 KM/SEC SWING ANG 60.19 DEG INCID ANG 68.45 DEG LONGITUDE 9.66 DEG
 LONG 13.90 DEG N.DEV. 354.82 DEG EMISS ANG 3.69 DEG
 11.76 DEG PHASE ANG 65.25 DEG ALPHA 3.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 37.31 DEG AB 987.8 KM
 A LONG 75.05 DEG BC 971.0 KM
 B LAT -31.08 DEG CD 431.2 KM
 B LONG 57.80 DEG DA 335.8 KM
 C LAT -14.07 DEG TILT DISTANCE
 C LONG -47.28 DEG 2.0
 D LAT 36.80 DEG
 D LONG -48.58 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 28.95 DEG AB 996.8 KM
 A LONG 15.87 DEG BC 253.0 KM
 B LAT -4.22 DEG CD 002.4 KM
 B LONG 12.16 DEG DA 249.7 KM
 C LAT -3.61 DEG TILT DISTANCE
 C LONG 3.81 DEG 15.3
 D LAT 29.86 DEG
 D LONG 6.45 DEG ALPHA

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MISSION/
FRAME NO.4098 YR.MD.DY
HR.MI.SEC

TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
670517	ALT	2937.53	KM	TILT ANG	2.19	SUN AZIM	111.24	LATITUDE	4.0.97 DEG
181625.41	ALT RT	0.1725	KM/SEC	TILT AZIM	118.24	INCID ANG	66.64	LONGITUDE	1.6.53 DEG
	LAT	42.81	DEG	SWING ANG	282.30	EMISS ANG	5.89		
	LONG	14.21	DEG	N.DEV.	341.39	PHASE ANG	72.44		
						ALPHA	-5.81		

MISSION/
FRAME NO.4099 YR.MD.DY
HR.MI.SEC

TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
670517	ALT	6142.23	KM	TILT ANG	2.36	SUN AZIM	271.47	LATITUDE	3.51 DEG
232421.21	ALT RT	0.0098	KM/SEC	TILT AZIM	293.95	INCID ANG	105.12	LONGITUDE	179.92 DEG
	LAT	0.11	DEG	SWING ANG	293.86	EMISS ANG	10.77		
	LONG	-172.38	DEG	N.DEV.	180.53	PHASE ANG	115.04		
						ALPHA	-9.88		

MISSION/
FRAME NO.4099 YR.MD.DY
HR.MI.SEC

TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
670517	ALT	6142.23	KM	TILT ANG	2.36	SUN AZIM	271.47	LATITUDE	3.51 DEG
232421.21	ALT RT	0.0098	KM/SEC	TILT AZIM	293.95	INCID ANG	105.12	LONGITUDE	179.92 DEG
	LAT	0.11	DEG	SWING ANG	293.86	EMISS ANG	10.77		
	LONG	-172.38	DEG	N.DEV.	180.53	PHASE ANG	115.04		
						ALPHA	-9.88		

TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
670517	ALT	AB 301.9 KM		TILT ANG	2.19	SUN AZIM	111.24	LATITUDE	4.0.97 DEG
232421.21	ALT RT	CD 506.9 KM		TILT AZIM	118.24	INCID ANG	66.64	LONGITUDE	1.6.53 DEG
	LAT	DA 188.9 KM		SWING ANG	282.30	EMISS ANG	5.89		
	LONG	EA 466.9 KM		N.DEV.	341.39	PHASE ANG	72.44		
						ALPHA	-5.81		

MISSION/
FRAME NO.4099 YR.MD.DY
HR.MI.SEC

TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
670517	ALT	AB 095.0 KM		TILT ANG	2.19	SUN AZIM	111.24	LATITUDE	4.0.97 DEG
232421.21	ALT RT	BC 276.6 KM		TILT AZIM	118.24	INCID ANG	66.64	LONGITUDE	1.6.53 DEG
	LAT	CD 083.8 KM		SWING ANG	282.30	EMISS ANG	5.89		
	LONG	DA 274.0 KM		N.DEV.	341.39	PHASE ANG	72.44		
						ALPHA	-5.81		

MISSION/
FRAME NO.4099 YR.MD.DY
HR.MI.SEC

TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
670517	ALT	AB 483.61 KM		TILT ANG	2.19	SUN AZIM	111.24	LATITUDE	4.0.97 DEG
232421.21	ALT RT	BC 675.9 KM		TILT AZIM	118.24	INCID ANG	66.64	LONGITUDE	1.6.53 DEG
	LAT	CD 394.3 KM		SWING ANG	282.30	EMISS ANG	5.89		
	LONG	DA 610.9 KM		N.DEV.	341.39	PHASE ANG	72.44		
						ALPHA	-5.81		

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FRAME NO.

A103 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 2976.2-0 KM TILT ANG 4.78 DEG SUN AZIM 68.05 DEG LATITUDE -42.72 DEG
 HR, MI, SEC ALT RT -0.1845 KM/SEC TILT AZIM 96.97 DEG INCID ANG 68.65 DEG LONGITUDE 12.29 DEG
 LAT -42.26 DEG SWING ANG 295.36 DEG EMISS ANG 1.3.07 DEG
 LONG 1.05 DEG N.DEV. 25.98 DEG PHASE ANG 80.89 DEG
 ALPHA -12.30 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -40.68 DEG AB 299.9 KM
 A LONG -38.84 DEG BC 222.1 KM
 B LAT -51.76 DEG CD 013.3 KM
 B LONG -41.73 DEG DA 274.6 KM
 C LAT -63.54 DEG TILT DISTANCE 6.6
 C LONG -123.54 DEG
 D LAT 2.23 DEG C LONG 22.45 DEG
 D LONG -50.11 DEG D LAT -27.57 DEG
 D LAT -50.11 DEG D LONG -0.77 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -23.93 DEG AB 135.3 KM
 A LONG 8.74 DEG BC 295.3 KM
 B LAT -55.59 DEG CD 110.0 KM
 B LONG 37.62 DEG DA 281.4 KM
 C LAT -61.48 DEG TILT DISTANCE 51.0
 C LONG 22.45 DEG
 D LAT -27.57 DEG
 D LONG -0.77 DEG

MISSION/
FRAME NO.

41C1 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 2720.45 KM TILT ANG 0.55 DEG SUN AZIM 83.42 DEG LATITUDE -15.19 DEG
 HR, MI, SEC 061443.91 ALT RT -0.0756 KM/SEC TILT AZIM 150.14 DEG INCID ANG 68.90 DEG LONGITUDE 3.83 DEG
 LAT -14.45 DEG SWING ANG 336.12 DEG EMISS ANG 1.41 DEG
 LONG 3.38 DEG N.DEV. 6.10 DEG PHASE ANG 69.46 DEG
 ALPHA -0.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 16.78 DEG AB 447.6 KM
 A LONG 44.62 DEG BC 373.0 KM
 B LAT -29.58 DEG CD 412.0 KM
 B LONG 61.53 DEG DA 029.8 KM
 C LAT -35.21 DEG TILT DISTANCE 0.7
 C LONG -45.53 DEG
 D LAT 15.82 DEG C LONG 1.04 DEG
 D LONG -52.32 DEG D LAT 1.00 DEG
 D LONG -2.02 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 1.87 DEG AB 004.7 KM
 A LONG 6.23 DEG BC 253.2 KM
 B LAT -31.49 DEG CD 003.7 KM
 B LONG 10.83 DEG DA 251.0 KM
 C LAT -32.48 DEG TILT DISTANCE 5.8
 C LONG 1.04 DEG
 D LAT -2.02 DEG

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FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4102	670518 YR, MO, DY HS, WT, SEC	ALT 2699.16 KH ALT RT 0.0532 KH/SEC LAT 13.88 DEG LONG 5.14 DEG	ALT ANG 1.12 DEG TILT AZIM 237.85 CEG SWING ANG 52.76 DEG NDEV.	SUN AZIM 94.67 DEG INCID ANG 68.35 DEG EMISS ANG 2.85 DEG PHASE ANG 66.09 DEG	LATITUDE 12.96 DEG LONGITUDE 3.63 DEG

S/C POSITION
 ALT 2659.16 KM
 ALT RT 0.0532 KH/SEC
 LAT 13.88 DEG
 LONG 51.14 DEG

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
1.12 DEG	54.67 DEG	12.96 DEG
TILT AZIM	INCIO ANG	LONGITUDE
2.37-8.85 DEG	68.35 DEG	3.63 DEG
SWING ANG	EMISS ANG	
52.76 DEG	2.85 DEG	
N.DEV.	PHASE ANG	
3.55-23 DEG	66.09 DEG	
	ALPHA	2.25 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	36.62 DEG	AB 929.0 KM
A LONG	70.26 DEG	BC 568.1 KM
B LAT	-30.37 DEG	CD 529.4 KM
B LONG	53.02 DEG	DA 289.3 KM
C LAT	-16.32 DEG	TILT DISTANCE
C LONG	-51.52 DEG	1.5
D LAT	25.50 DEG	
D LONG	-50.69 DEG	

HIGH RESOLUTION	
CORNER	COORDINATE
A LAT	29.96 DEG
A LONG	9.74 DEG
B LAT	-4.18 DEG
B LONG	6.29 DEG
C LAT	-3.59 DEG
C LONG	-2.03 DEG
D LAT	29.77 DEG
D LONG	0.35 DEG

ISSN/

FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4103	670518 YR MO. DY HR. MI. SEC	ALT 2526.59 KH ALT RT 0.1710 KH/SEC LAT 42.76 DEG LONG 7.57 DEG	ALT ANG 1.72 DEG TILT AZIM 107.73 DEG SWING ANG 272.39 DEG N.DEV.	SUN AZIM 110.71 DEG INCID ANG 67.72 DEG SWISS ANG 4.52 DEG PHASE ANG 72.35 DEG	POINT 41-81 DEG LONGITUDE 11-26 DEG

S/C POSITION
 ALT RT 2926.59 KW
 ALT RT 0.1710 KW/SEC
 LAT RT 42.76 DEG
 LONG 7.57 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	3C .80	DEG AB 973. 9 KM
A LONG	77.76	DEG BC 555. 5 KM
B LAT	-7.48	DEG CD 936. 7 KM
B LONG	55.14	DEG DA 225. 9 KM
C LAT	1.95	DEG TILT DISTAN
C LONG	-47.40	DEG 2.4
D LAT	56.41	DEG
D LONG	-102.58	DEG

HIGH RESOLUTION		S	
CORNER	COORDINATE		
A LAT	56°50' DEG	A6	
A LONG	29°78' DEG	B6	
C LAT	22°88' DEG	C6	
C LONG	10°24' DEG	D6	
E LAT	25°33' DEG	T	
E LONG	7°71' DEG		
F LAT	65°35' DEG		
F LONG	1A-13 DEG		

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S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME YR, MO, DY HR, MI, SEC 670518 0657 7.91	ALT RT 3.227.69 KM 0.2466 KM/SEC LAT 71.87 DEG LONG 15.88 DEG	TILT ANG 0.85 DEG TILT AZIM 153.63 DEG SWING ANG 330.36 DEG N.DEV. 354.65 DEG	SUN AZIM 125.41 DEG INCID ANG 77.78 DEG EMISS ANG 2.53 DEG PHASE ANG 79.96 DEG ALPHA -2.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 26.11 DEG A LONG 58.10 DEG B LAT 16.66 DEG B LONG 67.73 DEG C LAT 14.62 DEG C LONG -52.40 DEG D LAT 32.27 DEG D LONG -85.81 DEG	AB 438.9 KM BC 918.4 KM CD 588.7 KM DA 640.6 KM TILT DISTANCE 1.1	CORNER COORDINATE A LAT 82.64 DEG A LONG 116.93 DEG B LAT 47.77 DEG B LONG 23.18 DEG C LAT 48.36 DEG C LONG 7.20 DEG D LAT 86.23 DEG D LONG -1n3.96 DEG

MISSION/
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME YR, MO, DY HR, MI, SEC 670518 1604 5.71	ALT RT 3.534.50 KM -0.2541 KM/SEC LAT -71.71 DEG LONG -13.37 DEG	TILT ANG 3.44 DEG TILT AZIM 104.48 DEG SWING ANG 271.99 DEG N.DEV. 9.12 DEG	SUN AZIM 57.96 DEG INCID ANG 82.85 DEG EMIS ANG 10.49 DEG PHASE ANG 90.39 DEG ALPHA -9.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -41.09 DEG A LONG -67.67 DEG B LAT -45.69 DEG B LONG -78.39 DEG C LAT -29.64 DEG C LONG -119.05 DEG D LAT -12.75 DEG D LONG -55.40 DEG	AB 679.3 KM BC 271.3 KM CD 873.3 KM DA 741.9 KM TILT DISTANCE 4.8	CORNER COORDINATE A LAT -48.61 DEG A LONG 13.83 DEG B LAT -79.22 DEG B LONG 119.97 DEG C LAT -84.92 DEG C LONG -157.46 DEG D LAT -59.19 DEG D LONG -3.34 DEG

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME YR, MO, DY HR, MI, SEC 670518 0657 7.91	ALT RT 3.227.69 KM 0.2466 KM/SEC LAT 71.87 DEG LONG 15.88 DEG	TILT ANG 0.85 DEG TILT AZIM 153.63 DEG SWING ANG 330.36 DEG N.DEV. 354.65 DEG	SUN AZIM 125.41 DEG INCID ANG 77.78 DEG EMISS ANG 2.53 DEG PHASE ANG 79.96 DEG ALPHA -2.19 DEG

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 82.64 DEG A LONG 116.93 DEG B LAT 47.77 DEG B LONG 23.18 DEG C LAT 48.36 DEG C LONG 7.20 DEG D LAT 86.23 DEG D LONG -1n3.96 DEG	AB 278.9 KM BC 323.1 KM CD 275.9 KM DA 317.9 KM TILT DISTANCE 9.5	CORNER COORDINATE A LAT 278.9 KM BC 323.1 KM CD 275.9 KM DA 317.9 KM TILT DISTANCE 9.5

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 82.64 DEG A LONG 116.93 DEG B LAT 47.77 DEG B LONG 23.18 DEG C LAT 48.36 DEG C LONG 7.20 DEG D LAT 86.23 DEG D LONG -1n3.96 DEG	AB 278.9 KM BC 323.1 KM CD 275.9 KM DA 317.9 KM TILT DISTANCE 9.5	CORNER COORDINATE A LAT 278.9 KM BC 323.1 KM CD 275.9 KM DA 317.9 KM TILT DISTANCE 9.5

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TIME

S/C POSITION

CORNER COORDINATE

PRINCIPAL POINT

4107	670518	ALT 2981.85 KM	TILT ANG 5.04 DEG	SUN AZIM 57.93 DEG	LATITUDE -4.241 DEG
	16442.31	ALT RT -0.1668 KM/SEC	TILT AZIM 94.94 DEG	INCID ANG 68.36 DEG	LONGITUDE 5.445 DEG
		LAT -42.26 DEG	SWING ANG 292.89 DEG	EMISS ANG 13.80 DEG	
		LONG -5.42 DEG	N.DEV. 25.87 DEG	PHASE ANG 81.46 DEG	
				ALPHA -13.16 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

PHOTO ILLUMINATION

A LAT -44.45 DEG	AB 287.3 KM	A LAT -23.51 DEG	AB 138.5 KM
A LONG -44.13 DEG	BC 221.3 KM	A LONG 2.97.3 DEG	BC 297.3 KM
B LAT -51.53 DEG	CD 035.8 KM	B LAT -55.37 DEG	CD 111.2 KM
B LONG -46.80 DEG	DA 322.2 KM	B LONG 31.75 DEG	DA 283.6 KM
C LAT -64.79 DEG	TILT DISTANCE 7.3	C LAT -61.15 DEG	TILT DISTANCE 53.8
C LONG -129.55 DEG		C LONG 16.55 DEG	
D LAT 5.27 DEG		D LAT -27.21 DEG	
D LONG -56.38 DEG		D LONG -6.56 DEG	

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

PHOTO ILLUMINATION

A LAT 2.94 DEG	AB 104.5 KM	A LAT 2.94 DEG	AB 104.5 KM
A LONG 0.20 DEG	BC 251.9 KM	A LONG 0.20 DEG	BC 251.9 KM
B LAT -30.45 DEG	CD 012.2 KM	B LAT -30.45 DEG	CD 012.2 KM
B LONG 4.44 DEG	DA 252.2 KM	B LONG 4.44 DEG	DA 252.2 KM
C LAT -31.35 DEG	TILT DISTANCE 5.4	C LAT -31.35 DEG	TILT DISTANCE 5.4
C LONG -5.21 DEG		C LONG -5.21 DEG	
D LAT 2.09 DEG		D LAT 2.09 DEG	
D LONG -9.10 DEG		D LONG -9.10 DEG	

MISSION/

FRAME NO.

YR, MO, DY

HR, MIN, SEC

TIME

S/C POSITION

CORNER COORDINATE

PRINCIPAL POINT

4108	670518	ALT 2719.03 KM	TILT ANG 0.51 DEG	SUN AZIM 83.78 DEG	LATITUDE -14.25 DEG
	171551.01	ALT RT -0.0782 KM/SEC	TILT AZIM 77.03 DEG	INCID ANG 68.87 DEG	LONGITUDE -2.36 DEG
		LAT -14.45 DEG	SWING ANG 262.53 DEG	EMISS ANG 1.32 DEG	
		LONG -3.17 DEG	N.DEV. 5.71 DEG	PHASE ANG 70.18 DEG	
				ALPHA -1.31 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

PHOTO ILLUMINATION

A LAT 19.64 DEG	AB 464.2 KM	A LAT 2.94 DEG	AB 104.5 KM
A LONG 41.85 DEG	BC 336.6 KM	A LONG 0.20 DEG	BC 251.9 KM
B LAT -28.68 DEG	CD 505.4 KM	B LAT -30.45 DEG	CD 012.2 KM
B LONG 54.72 DEG	DA 057.3 KM	B LONG 4.44 DEG	DA 252.2 KM
C LAT -44.49 DEG	TILT DISTANCE 0.7	C LAT -31.35 DEG	TILT DISTANCE 5.4
C LONG -68.14 DEG		C LONG -5.21 DEG	
D LAT 21.56 DEG		D LAT 2.09 DEG	
D LONG -59.04 DEG		D LONG -9.10 DEG	

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

PHOTO ILLUMINATION

A LAT 2.94 DEG	AB 104.5 KM	A LAT 2.94 DEG	AB 104.5 KM
A LONG 0.20 DEG	BC 251.9 KM	A LONG 0.20 DEG	BC 251.9 KM
B LAT -30.45 DEG	CD 012.2 KM	B LAT -30.45 DEG	CD 012.2 KM
B LONG 4.44 DEG	DA 252.2 KM	B LONG 4.44 DEG	DA 252.2 KM
C LAT -31.35 DEG	TILT DISTANCE 5.4	C LAT -31.35 DEG	TILT DISTANCE 5.4
C LONG -5.21 DEG		C LONG -5.21 DEG	
D LAT 2.09 DEG		D LAT 2.09 DEG	
D LONG -9.10 DEG		D LONG -9.10 DEG	

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MISSION/

FRAME NO.

4105

TIME

67CE18

YR, MO, DY

HR, MI, SEC

174731.71

S/C POSITION				S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	2693.06 KM	TIILT ANG	1.31 DEG	SUN AZIM	94.69 DEG	LATITUDE	13.79 DEG	LONGITUDE	-3.58 DEG
ALT RT	C.350A KM/SEC	TIILT AZIM	267.35 DEG	INCID ANG	69.47 DEG				
LAT	13.89 DEG	SWING ANG	81.87 DEG	EMISS ANG	3.35 DEG				
LONG	-7.48 DEG	N.DEV.	355.02 DEG	PHASE ANG	66.16 DEG				
				ALPHA	3.32 DEG				

MEDIUM RESOLUTION				HIGH RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
A LAT	38.28 DEG	AB	016.1 KM	A LAT	29.83 DEG	AB	991.2 KM
A LONG	67.44 DEG	BC	922.7 KM	A LONG	2.62 DEG	BC	250.6 KM
B LAT	-30.43 DEG	CD	503.7 KM	B LAT	-3.16 DEG	CD	997.0 KM
B LONG	43.26 DEG	DA	393.1 KM	B LONG	-1.04 DEG	DA	249.7 KM
C LAT	-14.75 DEG	TIILT DISTANCE		C LAT	-2.57 DEG	TIILT DISTANCE	
C LONG	-55.82 DEG	1.8		C LONG	-9.31 DEG	13.9	
D LAT	37.11 DEG	D LAT		D LAT	30.72 DEG	D LAT	
D LONG	-66.68 DEG	D LONG		D LONG	-6.88 DEG	D LONG	

MISSION/

FRAME NO.

4110

TIME

67051B

YR, MO, DY

182012.71

HR, MI, SEC

S/C POSITION				S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	2515.84 KM	TIILT ANG	1.09 DEG	SUN AZIM	109.58 DEG	LATITUDE	42.59 DEG	LONGITUDE	3.35 DEG
ALT RT	0.1696 KM/SEC	TIILT AZIM	94.72 DEG	INCID ANG	69.24 DEG				
LAT	42.77 DEG	SWING ANG	258.91 DEG	EMISS ANG	2.93 DEG				
LONG	0.86 DEG	N.DEV.	342.52 DEG	PHASE ANG	72.10 DEG				
				ALPHA	-2.86 DEG				

MEDIUM RESOLUTION				HIGH RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
A LAT	25.72 DEG	AB	913.0 KM	A LAT	57.36 DEG	AB	081.7 KM
A LONG	65.10 DEG	BC	417.9 KM	A LONG	21.88 DEG	BC	270.8 KM
B LAT	4.33 DEG	CD	510.6 KM	B LAT	23.90 DEG	CD	076.2 KM
B LONG	42.44 DEG	DA	900.0 KM	B LONG	2.33 DEG	DA	271.9 KM
C LAT	14.43 DEG	TIILT DISTANCE		C LAT	26.20 DEG	TIILT DISTANCE	
C LONG	-50.69 DEG	1.5		C LONG	-7.22 DEG	11.6	
D LAT	57.52 DEG	D LAT		D LAT	61.19 DEG	D LAT	
D LONG	-87.77 DEG	D LONG		D LONG	5.92 DEG		

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MISSION/
FRAME NO.4112
YR. MD. DY
HR. MI. SECTIME
670515
044649.51
S/C POSITION
ALT 2086.04 KM
ALT RT -0.1891 KM/SEC
LAT -42.26 DEG
LONG -12.09 DEG
N.DEV.S/C ORIENTATION
TILT ANG 4.56 DEG
TILT AZIM 95.89 DEG
SWING ANG 294.35 DEG
N.DEV.
PHASE ANG 81.41 DEG
ALPHA -11.88 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -41.32 DEG	AB 31.8.2 KM
A LONG -52.63 DEG	BC 223.0 KM
B LAT -51.43 DEG	CD 042.3 KM
B LONG -55.51 DEG	DA 253.8 KM
C LAT -61.92 DEG	TILT DISTANCE 6.3
C LONG -138.77 DEG	
D LAT 2.01 DEG	
D LONG -63.25 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -23.71 DEG	AB 135.4 KM
A LONG -4.82 DEG	BC 294.5 KM
B LAT -55.66 DEG	CD 111.2 KM
B LONG 23.64 DEG	DA 281.9 KM
C LAT -61.38 DEG	TILT DISTANCE 4.8.7
C LONG 8.48 DEG	
D LAT -27.32 DEG	
D LONG -14.34 DEG	

MISSION/
FRAME NO.4113
YR. MD. DY
HR. MI. SECTIME
670519
0515 0.01
S/C POSITION
ALT 2718.03 KM
ALT RT -0.0809 KM/SEC
LAT -14.45 DEG
LONG -9.81 DEG
N.DEV.S/C ORIENTATION
TILT ANG 0.22 DEG
TILT AZIM 123.78 DEG
SWING ANG 309.59 DEG
N.DEV.
PHASE ANG 5.89 DEG
ALPHA -0.43 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 17.75 DEG	AB 433.0 KM
A LONG 31.50 DEG	BC 336.8 KM
B LAT -25.05 DEG	CD 408.5 KM
B LONG 46.24 DEG	DA 000.5 KM
C LAT -26.16 DEG	TILT DISTANCE 0.3
C LONG -61.39 DEG	
D LAT 19.22 DEG	
D LONG -64.77 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -7.05 DEG	AB 003.2 KM
A LONG -30.84 DEG	BC 252.1 KM
B LAT -2.67 DEG	CD 002.5 KM
B LONG -31.80 DEG	DA 251.5 KM
C LAT -12.36 DEG	TILT DISTANCE 2.3
C LONG 1.66 DEG	
D LAT -15.23 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT 2.49 DEG	AB 003.2 KM
A LONG -7.05 DEG	BC 252.1 KM
B LAT -30.84 DEG	CD 002.5 KM
B LONG -2.67 DEG	DA 251.5 KM
C LAT -31.80 DEG	
C LONG -12.36 DEG	
D LAT 1.66 DEG	
D LONG -15.23 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -23.71 DEG	AB 135.4 KM
A LONG -4.82 DEG	BC 294.5 KM
B LAT -55.66 DEG	CD 111.2 KM
B LONG 23.64 DEG	DA 281.9 KM
C LAT -61.38 DEG	TILT DISTANCE 4.8.7
C LONG 8.48 DEG	
D LAT -27.32 DEG	
D LONG -14.34 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT -23.71 DEG	AB 135.4 KM
A LONG -4.82 DEG	BC 294.5 KM
B LAT -55.66 DEG	CD 111.2 KM
B LONG 23.64 DEG	DA 281.9 KM
C LAT -61.38 DEG	TILT DISTANCE 4.8.7
C LONG 8.48 DEG	
D LAT -27.32 DEG	
D LONG -14.34 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

4114 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670515 ALT 2687.23 KM TILT ANG 1.83 DEG SUN AZIM 94.22 DEG LATITUDE 13.45 DEG
 HR, MI, SEC 054538.21 ALT RT 0.0484 KM/SEC TILT AZIM 261.76 DEG INCID ANG 76.88 DEG LONGITUDE -16.97 DEG
 LAT 13.89 DEG SWING ANG 76.56 DEG SWING ANG 4.56 DEG
 LONG -8.09 DEG N.DEV. 355.55 DEG PHASE ANG 66.15 DEG
 LAT 13.89 DEG N.DEV. 355.55 DEG ALPHA 4.53 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION															
A LAT 39.39 DEG	AB 801.5 KM	CORNER COORDINATE SIDE LENGTH															
A LONG 53.50 DEG	BC 909.2 KM	B LAT -31.42 DEG	CD 378.3 KM	A LAT 29.47 DEG AB 588.9 KM	B LONG 25.42 DEG	DA 414.8 KM	C LAT -13.83 DEG	TILT DISTANCE 2.5	B LAT -5.47 DEG BC 251.2 KM	C LONG -65.27 DEG		D LAT 34.51 DEG		B LONG -3.47 DEG CD 996.7 KM	D LONG -75.80 DEG		C LAT -3.00 DEG DA 249.3 KM
B LAT -31.42 DEG	CD 378.3 KM	A LAT 29.47 DEG AB 588.9 KM															
B LONG 25.42 DEG	DA 414.8 KM	C LAT -13.83 DEG	TILT DISTANCE 2.5	B LAT -5.47 DEG BC 251.2 KM	C LONG -65.27 DEG		D LAT 34.51 DEG		B LONG -3.47 DEG CD 996.7 KM	D LONG -75.80 DEG		C LAT -3.00 DEG DA 249.3 KM					
C LAT -13.83 DEG	TILT DISTANCE 2.5	B LAT -5.47 DEG BC 251.2 KM															
C LONG -65.27 DEG		D LAT 34.51 DEG		B LONG -3.47 DEG CD 996.7 KM	D LONG -75.80 DEG		C LAT -3.00 DEG DA 249.3 KM										
D LAT 34.51 DEG		B LONG -3.47 DEG CD 996.7 KM															
D LONG -75.80 DEG		C LAT -3.00 DEG DA 249.3 KM															

MISSION/
FRAME NO.

4115 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670515 ALT 2905.18 KM TILT ANG 1.36 DEG SUN AZIM 109.53 DEG LATITUDE 42.27 DEG
 HR, MI, SEC 042212.31 ALT RT 9.1680 KM/SEC TILT AZIM 101.26 DEG INCID ANG 69.05 DEG LONGITUDE -2.67 DEG
 LAT 42.75 DEG SWING ANG 266.58 DEG EMIS ANG 3.55 DEG
 LONG -5.70 DEG N.DEV. 343.29 DEG PHASE ANG 72.68 DEG
 LAT 42.75 DEG N.DEV. 343.29 DEG ALPHA -3.63 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION															
A LAT 25.10 DEG	AB 924.1 KM	CORNER COORDINATE SIDE LENGTH															
A LONG 60.35 DEG	BC 437.1 KM	B LAT 2.99 DEG	CD 212.3 KM	A LAT 57.14 DEG AB 078.6 KM	B LONG 37.57 DEG	DA 804.9 KM	C LAT 1.41 DEG	TILT DISTANCE 1.9	B LAT 15.34 DEG BC 270.5 KM	C LONG -62.11 DEG		D LAT 68.35 DEG		B LONG 23.58 DEG CD 071.7 KM	D LONG -88.63 DEG		C LAT -3.38 DEG DA 270.9 KM
B LAT 2.99 DEG	CD 212.3 KM	A LAT 57.14 DEG AB 078.6 KM															
B LONG 37.57 DEG	DA 804.9 KM	C LAT 1.41 DEG	TILT DISTANCE 1.9	B LAT 15.34 DEG BC 270.5 KM	C LONG -62.11 DEG		D LAT 68.35 DEG		B LONG 23.58 DEG CD 071.7 KM	D LONG -88.63 DEG		C LAT -3.38 DEG DA 270.9 KM					
C LAT 1.41 DEG	TILT DISTANCE 1.9	B LAT 15.34 DEG BC 270.5 KM															
C LONG -62.11 DEG		D LAT 68.35 DEG		B LONG 23.58 DEG CD 071.7 KM	D LONG -88.63 DEG		C LAT -3.38 DEG DA 270.9 KM										
D LAT 68.35 DEG		B LONG 23.58 DEG CD 071.7 KM															
D LONG -88.63 DEG		C LAT -3.38 DEG DA 270.9 KM															

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION									
A LAT 29.47 DEG	AB 588.9 KM	CORNER COORDINATE SIDE LENGTH									
A LONG -5.47 DEG	BC 251.2 KM	B LAT -3.47 DEG	CD 996.7 KM	B LONG -3.00 DEG	DA 249.3 KM	C LAT -15.52 DEG	TILT DISTANCE 19.4	D LAT 33.30 DEG		D LONG -14.50 DEG	
B LAT -3.47 DEG	CD 996.7 KM										
B LONG -3.00 DEG	DA 249.3 KM										
C LAT -15.52 DEG	TILT DISTANCE 19.4										
D LAT 33.30 DEG											
D LONG -14.50 DEG											

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR	MO	DAY	ALT	3397.00 KM	SUN AZIM 124.13 DEG	LATITUDE 70.91 DEG
HR	MI	SEC	ALT RT	0.2461 KM/SEC	TILT ANG 0.64 DEG	LONGITUDE 4.49 DEG
4116	670515	1600 4.91	LAT 71.89 DEG	SWING ANG 325.82 DEG	EMISS ANG 1.90 DEG	
			LONG 2.48 DEG	N.DEV. 355.69	PHASE ANG 8C.09 DEG	
					ALPHA -1.71 DEG	
MEDIUM RESOLUTION						
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION			
A LAT	25.20 DEG	AB 361.6 KM	A LAT	82.98 DEG	AB 265.8 KM	
A LONG	84.54 DEG	BC 91.0.5 KM	A LONG	1C7.48 DEG	BC 319.3 KM	
B LAT	23.26 DEG	CD 630.1 KM	B LAT	6.60 DEG	CD 263.3 KM	
B LONG	73.36 DEG	DA 609.2 KM	B LONG	1C.18 DEG	DA 315.6 KM	
C LAT	14.95 DEG	TILT DISTANCE C.9	C LAT	49.07 DEG	TILT DISTANCE 5.8	
C LONG	-64.28 DEG		C LONG	-55.87 DEG		
D LAT	32.24 DEG		D LAT	85.77 DEG		
D LONG	-5E.83 DEG		D LONG	-118.02 DEG		
HIGH RESOLUTION						
CORNER COORDINATE		SIDE LENGTH	PRINCIPAL POINT			
A LAT	25.20 DEG	AB 361.6 KM	A LAT	82.98 DEG	AB 265.8 KM	
A LONG	84.54 DEG	BC 91.0.5 KM	A LONG	1C7.48 DEG	BC 319.3 KM	
B LAT	23.26 DEG	CD 630.1 KM	B LAT	6.60 DEG	CD 263.3 KM	
B LONG	73.36 DEG	DA 609.2 KM	B LONG	1C.18 DEG	DA 315.6 KM	
C LAT	14.95 DEG	TILT DISTANCE C.9	C LAT	49.07 DEG	TILT DISTANCE 5.8	
C LONG	-64.28 DEG		C LONG	-55.87 DEG		
D LAT	32.24 DEG		D LAT	85.77 DEG		
D LONG	-5E.83 DEG		D LONG	-118.02 DEG		
MEDIUM RESOLUTION						
CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION			
A LAT	3554.96 KM	AB 155.2 KM	A LAT	62.21 DEG	AB 343.3 KM	
A LONG	150.0 -0.2566 KM/SEC	BC 276.2 KM	A LONG	-1.13 DEG	BC 341.6 KM	
B LAT	-71.67 DEG	CD 761.3 KM	B LAT	-79.86 DEG	CD 320.4 KM	
B LONG	-93.52 DEG	DA 924.9 KM	B LONG	110.51 DEG	DA 339.5 KM	
C LAT	-26.19 DEG	TILT DISTANCE 4.1	C LAT	-84.11 DEG	TILT DISTANCE 21.8	
C LONG	-131.01 DEG		C LONG	-154.01 DEG		
D LAT	-7.82 DEG		D LAT	-50.26 DEG		
D LONG	-66.53 DEG		D LONG	-18.40 DEG		
HIGH RESOLUTION						
CORNER COORDINATE		SIDE LENGTH	PRINCIPAL POINT			
A LAT	-40.0 CB. DEG	AB 155.2 KM	A LAT	-49.05 DEG	AB 343.3 KM	
A LONG	-82.21 DEG	BC 276.2 KM	A LONG	-1.13 DEG	BC 341.6 KM	
B LAT	-43.01 DEG	CD 761.3 KM	B LAT	-79.86 DEG	CD 320.4 KM	
B LONG	-93.52 DEG	DA 924.9 KM	B LONG	110.51 DEG	DA 339.5 KM	
C LAT	-26.19 DEG	TILT DISTANCE 4.1	C LAT	-84.11 DEG	TILT DISTANCE 21.8	
C LONG	-131.01 DEG		C LONG	-154.01 DEG		
D LAT	-7.82 DEG		D LAT	-50.26 DEG		
D LONG	-66.53 DEG		D LONG	-18.40 DEG		

MISSION/
FRAME NO.

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MISSION/
FRAME NO.

4119 YR, MO, DY
HR, MI, SEC 670515 164555.01
TIME S/C POSITION ALT RT 2990.55 KM
LAT -0.193 KM/SEC
LONG -42.226 DEG
N.DEV. -18.74 DEG

S/C ORIENTATION TILT ANG 4.78 DEG
TILT AZIM 97.42 DEG
SWING ANG 295.42 DEG
N.DEV. 25.65 .DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -44.45 DEG AB 314.6 KM
A LONG -58.78 DEG BC 223.2 KM
B LAT -51.59 DEG CD 567.7 KM
B LONG -61.74 DEG DA 209.1 KM
C LAT -64.55 DEG TILT DISTANCE
C LONG -135.63 DEG 6.5
D LAT -1.26 DEG C LONG 2.61 DEG
D LONG -68.27 DEG D LAT -27.51 DEG
D LONG -20.45 DEG D LONG -21.41 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -23.90 DEG AB 140.4 KM
A LONG -19.88 DEG BC 296.7 KM
B LAT -55.91 DEG CD 114.8 KM
B LONG 18.01 DEG DA 282.7 KM
C LAT -61.68 DEG TILT DISTANCE
C LONG 2.61 DEG 51.1
D LAT -27.51 DEG
D LONG -20.45 DEG

MISSION/
FRAME NO.

4120 YR, MO, DY
HR, MI, SEC 1721 6.71
TIME S/C POSITION ALT RT 2717.50 KM
LAT -0.0836 KM/SEC
LONG -14.46 DEG
N.DEV. -16.43 DEG

S/C ORIENTATION TILT ANG 0.50 DEG
TILT AZIM 77.37 DEG
SWING ANG 263.00 DEG
N.DEV. 5.82 DEG

MEDIUM RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 15.67 DEG AB 461.1 KM
A LONG 26.29 DEG BC 333.9 KM
B LAT -28.60 DEG CD 905.4 KM
B LONG 41.26 DEG DA 054.6 KM
C LAT -44.61 DEG TILT DISTANCE
C LONG -81.65 DEG 0.7
D LAT 21.40 DEG C LONG -16.45 DEG
D LONG -72.32 DEG D LAT 2.05 DEG
D LONG -21.41 DEG D LONG -21.41 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 2.90 DEG AB 003.8 KM
A LONG -43.12 DEG BC 251.7 KM
B LAT -30.45 DEG CD 031.6 KM
B LONG -8.81 DEG DA 252.0 KM
C LAT -31.37 DEG TILT DISTANCE
C LONG 5.3
D LAT 2.05 DEG
D LONG -21.41 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 69.06 DEG LATITUDE -42.79 DEG
INCID ANG 69.65 DEG LONGITUDE -7.44 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 84.03 DEG LATITUDE -14.29 DEG
INCID ANG 69.89 DEG LONGITUDE -15.64 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
SUN AZIM 84.03 DEG LATITUDE -14.29 DEG
INCID ANG 69.89 DEG LONGITUDE -15.64 DEG

LUNAR CRIBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDEREC BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

TIME YR, MO, DY 670515
 4121 175142.81
 ALT RT 0.0459 KM/SEC
 LAT 13.87 DEG
 LONG -14.69 DEG
 N.DEV. 354.78 DEG

S/C POSITION
 ALT 2681.87 KM
 ALT RT 0.0459 KM/SEC
 LAT 13.87 DEG
 LONG -14.69 DEG

S/C ORIENTATION
 TILT ANG 1.22 DEG
 TILT AZIM 268.42 DEG
 SWING ANG 82.70 DEG
 N.DEV. 354.78 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 37.58 DEG AB 528.7 KM
 A LONG 62.59 DEG BC 929.5 KM
 B LAT -21.39 DEG CD 517.2 KM
 B LONG 36.20 DEG DA 369.6 KM
 C LAT -14.74 DEG TILT DISTANCE 1.8
 C LONG -73.01 DEG
 D LAT 37.26 DEG
 D LONG -76.75 DEG

SIDE LENGTH
 AB 528.7 KM
 BC 929.5 KM
 CD 517.2 KM
 DA 369.6 KM
 TILT DISTANCE 1.8

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 29.76 DEG AB 987.0 KM
 A LONG -10.55 DEG BC 249.4 KM
 B LAT -3.07 DEG CD 992.7 KM
 B LONG -14.34 DEG DA 248.7 KM
 C LAT -2.45 DEG TILT DISTANCE 14.1
 C LONG -22.57 DEG
 D LAT 30.69 DEG
 D LONG -20.00 DEG

SIDE LENGTH
 AB 987.0 KM
 BC 249.4 KM
 CD 992.7 KM
 DA 248.7 KM
 TILT DISTANCE 14.1

MISSION/
FRAME NO.

TIME YR, MO, DY 670515
 4122 182411.31
 ALT RT 0.1654 KM/SEC
 LAT 42.76 DEG
 LONG -12.27 DEG
 N.DEV. 342.42 DEG

S/C POSITION
 ALT 2895.05 KM
 ALT RT 0.1654 KM/SEC
 LAT 42.76 DEG
 LONG -12.27 DEG

S/C ORIENTATION
 TILT ANG 1.40 DEG
 TILT AZIM 105.91 DEG
 SWING ANG 270.34 DEG
 N.DEV. 342.42 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 29.76 DEG AB 987.0 KM
 A LONG -10.55 DEG BC 249.4 KM
 B LAT -3.07 DEG CD 992.7 KM
 B LONG -14.34 DEG DA 248.7 KM
 C LAT -2.45 DEG TILT DISTANCE 14.1
 C LONG -22.57 DEG
 D LAT 30.69 DEG
 D LONG -20.00 DEG

SIDE LENGTH
 AB 987.0 KM
 BC 249.4 KM
 CD 992.7 KM
 DA 248.7 KM
 TILT DISTANCE 14.1

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 56.67 DEG AB 074.8 KM
 A LONG 8.92 DEG BC 269.8 KM
 B LAT 23.42 DEG CD 067.8 KM
 B LONG -10.25 DEG DA 269.7 KM
 C LAT 25.77 DEG TILT DISTANCE 14.9
 C LONG -19.71 DEG
 D LAT 69.44 DEG
 D LONG -6.62 DEG

SIDE LENGTH
 AB 074.8 KM
 BC 269.8 KM
 CD 067.8 KM
 DA 269.7 KM
 TILT DISTANCE 14.9

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 56.67 DEG AB 074.8 KM
 A LONG 8.92 DEG BC 269.8 KM
 B LAT 23.42 DEG CD 067.8 KM
 B LONG -10.25 DEG DA 269.7 KM
 C LAT 25.77 DEG TILT DISTANCE 14.9
 C LONG -19.71 DEG
 D LAT 69.44 DEG
 D LONG -6.62 DEG

SIDE LENGTH
 AB 074.8 KM
 BC 269.8 KM
 CD 067.8 KM
 DA 269.7 KM
 TILT DISTANCE 14.9

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MISSION / FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT					
4123	YR. MO. DY HR. MI. SEC	670 21S 232753.61	ALT ALT RT 0.794 LAT LONG	6151.33 KM KM/SEC -2.20 DEG 161.026 DFG	SUN AZIM TILT AZIM SWING ANG N.DEV.	271.67 DEG 44.75 DEG 64.51 DEG 199.422 DEG	INCID ANG EXISS ANG 2.04 DEG PHASE ANG	1.11 DEG 112.05 DEG 2.03 DEG 110.63 DEG	LATITUDE LONGITUDE	1.11 DEG 162.38 DEG

	MEDIUM	RESOLUTION	SIDE	LEAF
CORNER	CORORDINATE			
A	LAT	C.	DEG	J.
A	LONG	R.	DEG	K.
B	LAT	C.	DEG	G.
B	LONG	R.	DEG	H.
C	LAT	C.	DEG	I.
C	LONG	C.	DEG	TILT
D	LAT	C.	DEG	D.
D	LONG	R.	DEG	S.

HIGH RESOLUTION		SIDE L
CORNER	CODORINATE	
A LAT	-42.89 DEG	DA 3858
A LONG	167.87 DEG	BC 604
B LAT	38.00 DEG	CD 397
B LONG	133.27 DEG	DA 598
C LAT	47.20 DEG	TILT D
C LONG	157.64 DEG	4
D LAT	-34.76 DEG	
D LONG	-168.77 DEG	

MISSION /
FRAME NC.
4124

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MISSION/

FRAME NO.

4125
YR.MD.DY
HR.MI.SECTIME
670520
052313.41
S/C POSITION
ALT RT 2716.97 KM
LAT RT -0.0859 KM/SEC
LAT -14.43 DEG
LONG -23.06 DEG
N.DEV. -S/C ORIENTATION
TILT ANG. 0.32 DEG
TILT AZIM 170.63 DEG
SWING ANG 356.19 DEG
EMISS ANG 0.82 DEG
PHASE ANG 71.17 DEG
ALPHA -0.05 DEG.PHOTO ILLUMINATION
SUN AZIM 80.15 DEG
INCID ANG 71.12 DEG
EMISS ANG 0.82 DEG
PHASE ANG 71.17 DEG
ALPHA -0.05 DEG.PRINCIPAL POINT
LATITUDE -14.89 DEG
LONGITUDE -22.97 DEG

MISSION/

FRAME NO.

4126
YR.MD.DY
HR.MI.SECTIME
670520
055347.71
S/C POSITION
ALT RT 2677.29 KM
LAT RT 0.0438 KM/SEC
LAT 13.93 DEG
LONG -21.27 DEG
N.DEV. -S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 238.37 DEG
SWING ANG 52.95 DEG
EMISS ANG 3.35 DEG
PHASE ANG 67.78 DEG
ALPHA 2.68 DEGPHOTO ILLUMINATION
SUN AZIM 90.32 DEG
INCID ANG 75.48 DEG
EMISS ANG 3.35 DEG
PHASE ANG 67.78 DEG
ALPHA 2.68 DEGPRINCIPAL POINT
LATITUDE 12.85 DEG
LONGITUDE -23.35 DEG

MISSION/

FRAME NO.

4126
YR.MD.DY
HR.MI.SECTIME
670520
055347.71
S/C POSITION
ALT RT 2677.29 KM
LAT RT 0.0438 KM/SEC
LAT 13.93 DEG
LONG -21.27 DEG
N.DEV. -S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 238.37 DEG
SWING ANG 52.95 DEG
EMISS ANG 3.35 DEG
PHASE ANG 67.78 DEG
ALPHA 2.68 DEGPHOTO ILLUMINATION
SUN AZIM 90.32 DEG
INCID ANG 75.48 DEG
EMISS ANG 3.35 DEG
PHASE ANG 67.78 DEG
ALPHA 2.68 DEGPRINCIPAL POINT
LATITUDE 12.85 DEG
LONGITUDE -23.35 DEG

MISSION/

FRAME NO.

4126
YR.MD.DY
HR.MI.SECTIME
670520
055347.71
S/C POSITION
ALT RT 2677.29 KM
LAT RT 0.0438 KM/SEC
LAT 13.93 DEG
LONG -21.27 DEG
N.DEV. -S/C ORIENTATION
TILT ANG 1.32 DEG
TILT AZIM 238.37 DEG
SWING ANG 52.95 DEG
EMISS ANG 3.35 DEG
PHASE ANG 67.78 DEG
ALPHA 2.68 DEGPHOTO ILLUMINATION
SUN AZIM 90.32 DEG
INCID ANG 75.48 DEG
EMISS ANG 3.35 DEG
PHASE ANG 67.78 DEG
ALPHA 2.68 DEGPRINCIPAL POINT
LATITUDE 12.85 DEG
LONGITUDE -23.35 DEG

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MISSION/
FRAME NO.

4127
YR, MO, DY
HR, MI, SEC

TIME
670520
052610.21

S/C POSITION
ALT RT 2886.38 KM
0.1650 KM/SEC
LAT 42.80 DEG
LONG -18.79 DEG

S/C ORIENTATION
TILT ANG 2.23 DEG
TILT AZIM 114.08 DEG
SWING ANG 278.30 DEG
N.DEV. 341.33 DEG

PHOTO ILLUMINATION
SUN AZIM 109.57 DEG
INCID ANG 68.24 DEG
EMISS ANG 5.93 DEG
PHASE ANG 74.13 DEG
ALPHA .. -5.89 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 16.63 DEG AB 237.7 KM
A LONG 54.17 DEG BC 587.7 KM
B LAT -4.72 DEG CD 972.0 KM
B LONG 31.65 DEG DA 134.6 KM
C LAT 1.28 DEG TILT DISTANCE 3.1
C LONG -72.32 DEG
D LAT 55.28 DEG
D LONG -125.12 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 55.43 DEG AB 075.2 KM
A LONG 3.97 DEG BC 271.3 KM
B LAT 22.41 DEG CD 064.1 KM
B LONG -15.87 DEG DA 269.5 KM
C LAT 25.02 DEG TILT DISTANCE 23.7
C LONG -24.94 DEG
D LAT 59.34 DEG
D LONG -10.93 DEG

MISSION/
FRAME NO.

4128
YR, MO, DY
HR, MI, SEC

TIME
670520
073941E.91

S/C POSITION
ALT RT 3369.22 KM
3.2454 KM/SEC
LAT 71.69 DEG
LONG -13.32 DEG

S/C ORIENTATION
TILT ANG 1.03 DEG
TILT AZIM 171.24 DEG
SWING ANG 347.32 DEG
N.DEV. 355.25 DEG

PHOTO ILLUMINATION
SUN AZIM 122.30 DEG
INCID ANG 78.35 DEG
EMISS ANG 3.02 DEG
PHASE ANG 80.31 DEG
ALPHA .. -1.97 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 24.07 DEG AB 751.2 KM
A LONG 83.88 DEG BC 868.2 KM
B LAT 25.01 DEG CD 342.3 KM
B LONG 56.58 DEG DA 512.7 KM
C LAT 31.67 DEG TILT DISTANCE 1.4
C LONG -82.54 DEG
D LAT 34.49 DEG
D LONG -110.80 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 83.13 DEG AB 256.8 KM
A LONG 82.97 DEG BC 318.2 KM
B LAT 47.67 DEG CD 255.2 KM
B LONG -4.17 DEG DA 311.5 KM
C LAT 48.17 DEG TILT DISTANCE 10.9
C LONG -19.88 DEG
D LAT 86.44 DEG
D LONG -116.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.43 DEG AB 075.2 KM
A LONG 3.97 DEG BC 271.3 KM
B LAT 22.41 DEG CD 064.1 KM
B LONG -15.87 DEG DA 269.5 KM
C LAT 25.02 DEG TILT DISTANCE 23.7
C LONG -24.94 DEG
D LAT 59.34 DEG
D LONG -10.93 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 83.13 DEG AB 256.8 KM
A LONG 82.97 DEG BC 318.2 KM
B LAT 47.67 DEG CD 255.2 KM
B LONG -4.17 DEG DA 311.5 KM
C LAT 48.17 DEG TILT DISTANCE 10.9
C LONG -19.88 DEG
D LAT 86.44 DEG
D LONG -116.82 DEG

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MISSION/
FRAME NO.4130
YR-MO-DY
HR-MI-SECTIME
071520
161143.11S/C POSITION
ALT 3574.83 KM
ALT RT -0.2585 KM/SEC
LAT -71.63 DEG
LONG -40.64 DEGS/C ORIENTATION
TILT ANG 4.09 DEG
TILT AZIM 46.58 CES
SWING ANG 211.11 DEG
N.DEV. 357.56 DEGPHOTO ILLUMINATION
SUN AZIM 69.34 DEG
INCID ANG 81.31 DEG
EMISS ANG 12.62 DEG
PHASE ANG 91.50 DEGPRINCIPAL POINT
LATITUDE -55.72 DEG
LONGITUDE -25.85 DEGMISSION/
FRAME NO.4131
YR-MO-DY
HR-HI-SECTIME
670520
165251.81S/C POSITION
ALT 2599.02 KM
ALT RT -0.1550 KM/SEC
LAT -42.20 DEG
LONG -32.12 DEGS/C ORIENTATION
TILT ANG 5.01 DEG
TILT AZIM 52.41 CES
SWING ANG 261.55 DEG
N.DEV. 23.30 DEGPHOTO ILLUMINATION
SUN AZIM 73.97 DEG
INCID ANG 70.47 DEG
EMISS ANG 13.79 DEG
PHASE ANG B2.84 DEGPRINCIPAL POINT
LATITUDE -36.51 DEG
LONGITUDE -23.47 DEGMISSION/
FRAME NO.4131
YR-MO-DY
HR-HI-SECTIME
670520
165251.81S/C POSITION
ALT 325.8 KM
ALT RT -221.3 KM
LAT 291.8 KM
LONG 315.3 KMS/C ORIENTATION
TILT ANG 5.01 DEG
TILT AZIM 52.41 CES
SWING ANG 261.55 DEG
N.DEV. 23.30 DEGPHOTO ILLUMINATION
SUN AZIM 73.97 DEG
INCID ANG 70.47 DEG
EMISS ANG 13.79 DEG
PHASE ANG B2.84 DEGPRINCIPAL POINT
LATITUDE -36.51 DEG
LONGITUDE -23.47 DEGMISSION/
FRAME NO.4131
YR-MO-DY
HR-HI-SECTIME
670520
165251.81S/C POSITION
ALT 325.8 KM
ALT RT -221.3 KM
LAT 291.8 KM
LONG 315.3 KMS/C ORIENTATION
TILT ANG 5.01 DEG
TILT AZIM 52.41 CES
SWING ANG 261.55 DEG
N.DEV. 23.30 DEGPHOTO ILLUMINATION
SUN AZIM 73.97 DEG
INCID ANG 70.47 DEG
EMISS ANG 13.79 DEG
PHASE ANG B2.84 DEGPRINCIPAL POINT
LATITUDE -36.51 DEG
LONGITUDE -23.47 DEGMISSION/
FRAME NO.4131
YR-MO-DY
HR-HI-SECTIME
670520
165251.81S/C POSITION
ALT 325.8 KM
ALT RT -221.3 KM
LAT 291.8 KM
LONG 315.3 KMS/C ORIENTATION
TILT ANG 5.01 DEG
TILT AZIM 52.41 CES
SWING ANG 261.55 DEG
N.DEV. 23.30 DEGPHOTO ILLUMINATION
SUN AZIM 73.97 DEG
INCID ANG 70.47 DEG
EMISS ANG 13.79 DEG
PHASE ANG B2.84 DEGPRINCIPAL POINT
LATITUDE -36.51 DEG
LONGITUDE -23.47 DEGMISSION/
FRAME NO.4131
YR-MO-DY
HR-HI-SECTIME
670520
165251.81S/C POSITION
ALT 325.8 KM
ALT RT -221.3 KM
LAT 291.8 KM
LONG 315.3 KMS/C ORIENTATION
TILT ANG 5.01 DEG
TILT AZIM 52.41 CES
SWING ANG 261.55 DEG
N.DEV. 23.30 DEGPHOTO ILLUMINATION
SUN AZIM 73.97 DEG
INCID ANG 70.47 DEG
EMISS ANG 13.79 DEG
PHASE ANG B2.84 DEGPRINCIPAL POINT
LATITUDE -36.51 DEG
LONGITUDE -23.47 DEGMISSION/
FRAME NO.4131
YR-MO-DY
HR-HI-SECTIME
670520
165251.81S/C POSITION
ALT 325.8 KM
ALT RT -221.3 KM
LAT 291.8 KM
LONG 315.3 KMS/C ORIENTATION
TILT ANG 5.01 DEG
TILT AZIM 52.41 CES
SWING ANG 261.55 DEG
N.DEV. 23.30 DEGPHOTO ILLUMINATION
SUN AZIM 73.97 DEG
INCID ANG 70.47 DEG
EMISS ANG 13.79 DEG
PHASE ANG B2.84 DEGPRINCIPAL POINT
LATITUDE -36.51 DEG
LONGITUDE -23.47 DEGMISSION/
FRAME NO.4131
YR-MO-DY
HR-HI-SECTIME
670520
165251.81S/C POSITION
ALT 325.8 KM
ALT RT -221.3 KM
LAT 291.8 KM
LONG 315.3 KMS/C ORIENTATION
TILT ANG 5.01 DEG
TILT AZIM 52.41 CES
SWING ANG 261.55 DEG
N.DEV. 23.30 DEGPHOTO ILLUMINATION
SUN AZIM 73.97 DEG
INCID ANG 70.47 DEG
EMISS ANG 13.79 DEG
PHASE ANG B2.84 DEGPRINCIPAL POINT
LATITUDE -36.51 DEG
LONGITUDE -23.47 DEG

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MISSION/
FRAME NO.4132 TIME
YR, MO, DY
HR, MI, SEC 670523
1725 6.71

S/C POSITION ALT RT -3.0882 KM/SEC
LAT -16.42 DEG LONG -29.69 DEG

S/C ORIENTATION TILT AZIM 3.35 DEG
SWING ANG 189.73 DEG N.DEV. 6.90 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 15.51 DEG	AB 068.2 KM
A LONG 12.10 DEG	BC 394.2 KM
B LAT -35.58 DEG	CD 025.2 KM
B LONG 28.57 DEG	DA 006.3 KM
C LAT -47.16 DEG	TILT DISTANCE A.5
C LONG -57.65 DEG	
D LAT 18.73 DEG	C LONG -31.90 DEG
D LONG -85.19 DEG	D LAT 8.32 DEG

PHOTO ILLUMINATION

INCID ANG 71.14 DEG

MISS ANG 6.63 DEG

PHASE ANG 72.09 DEG

ALPHA -1.17 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 9.42 DEG

AB 024.7 KM

A LONG -27.33 DEG

AC 245.9 KM

B LAT -24.65 DEG

CD 022.3 KM

B LONG -23.00 DEG

DA 261.2 KM

C LAT -25.70 DEG

TILT DISTANCE

C LONG -31.90 DEG

D LAT 8.32 DEG

D LONG -35.99 DEG

PHOTO ILLUMINATION

SUN AZIM 86.21 DEG

INCID ANG 71.14 DEG

MISS ANG 6.63 DEG

PHASE ANG 72.09 DEG

ALPHA -1.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 26.98 DEG	AR 429.1 KM
A LONG 26.66 DEG	BC 882.7 KM
B LAT -30.28 DEG	CD 552.9 KM
B LONG 16.91 DEG	DA 281.5 KM
C LAT -16.60 DEG	TILT DISTANCE 4.5
C LONG -84.24 DEG	
D LAT 32.27 DEG	C LONG -34.80 DEG
D LONG -64.08 DEG	D LAT 36.67 DEG

PHOTO ILLUMINATION

SUN AZIM 95.85 DEG

INCID ANG 71.49 DEG

MISS ANG 8.45 DEG

PHASE ANG 67.95 DEG

ALPHA 3.37 DEG

PHOTO ILLUMINATION

SUN AZIM 95.85 DEG

INCID ANG 71.49 DEG

MISS ANG 8.45 DEG

PHASE ANG 67.95 DEG

ALPHA 3.37 DEG

PHOTO ILLUMINATION

SUN AZIM 18.73 DEG

INCID ANG 71.49 DEG

MISS ANG 8.45 DEG

PHASE ANG 67.95 DEG

ALPHA 3.37 DEG

TILT DISTANCE

C LONG -26.79 DEG

DA 256.5 KM

C LAT 2.98 DEG

TILT DISTANCE

C LONG -34.80 DEG

D LAT 36.67 DEG

D LONG -37.89 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION /

MEDIUM RESOLUTION		SIDE L.E.
CORNER	COORDINATE	
A	LAT 18-62 DEG	AB 373*
A	LONG 41-20 DEG	BC 405.
B	LAT 6-68 DEG	CD 170.
B	LONG 23-33 DEG	DA Q18.
C	LAT -1-21 DEG	TI LT DI
C	LONG -77-85 DEG	5.
D	LAT 6C-07 DEG	
D	LONG -127-83 DEG	

HIGH RESOLUTION		SIDE L
CORNER	COORDINATE	
A LAT	60.84 DEG	AB 091
A LONG	5.71 DEG	BC 263
B LAT	28.44 DEG	CD 078
B LONG	-19.89 DEG	DA 279
C LAT	30.92 DEG	TILT D
C LONG	-29.49 DEG	39
D LAT	65.51 DEG	
D LONG	-12.05 DEG	

LENGHT	DISTANCE
091.8 KM	39.5
263.5 KM	
078.9 KM	
279.3 KM	

FRAME NO. #

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
670521 045435E.31	ALT 3.002°.96 ALT RT -0.1.964 LAT -42°16. DEG LONG -38°.84 DEG	TILT ANG 4.83 DEG TILT AZIM 97°1.13 DEG SWING ANG 295.40 DEG N.DEV. 25.98 DEG	SUN AZIM 70°.32 DEG INCID ANG 70°.76 DEG EMISS ANG 13.29 DEG PHASE ANG 83°.26 DEG	LATITUDE -42°.65 DEG LONGITUDE -27°.40 DEG
				ALPHA -712°.65 DEG

MEDIUM	RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A-LAT	-44°-56' DEG	AB	327.2 KM
A LONG	-78°-89' DEG	BC	224.1 KM
B LAT	-61°-70' DEG	CD	996.9 KM
B LONG	-81°-83' DEG	DA	233.1 KM
C LAT	-63°-73' DEG	TILT DISTANCE	
C LONG	-162°-55' DEG	6.7	
D LAT	-1°-53' DEG		
D LONG	-188°-28' DEG		

HIGH RESOLUTION			
CORNER	COORDINATE	SIDE	
A LAT	-23°.69 DEG	AB	
A LONG	-39°.96 DEG	BC	
B LAT	-55°.72 DEG	CD	
B LONG	-1°.72 DEG	DA	
C LAT	-61°.58 DEG	TIL	
C LONG	-17°.05 DEG		
D LAT	-27°.36 DEG		
D LONG	-29°.57 DEG		

± LENGTH

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MISSION/
FRAME NO.

4137 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 YR, MO, DY ALT 2718.01 KM TILT ANG 0°74 DEG SUN AZIM 64°12 DEG LATITUDE -14°59' DEG
 HR, MI, SEC ALT RT -0.0500 KM/SEC TILT AZIM 119°54 DEG INCID ANG 71°23 DEG LONGITUDE -75°28' DEG
 LAT -14°40 DEG SWING ANG 305°04 DEG SWISS ANG 1°91 DEG
 LONG -36°33 DEG N.DEV. 5.77 DEG PHASE ANG 72°80 DEG
 ALPHA -1°57 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 17°53 DEG AB 4.85°4 KM
 A LONG 7°50 DEG BC 393°2 KM
 B LAT -29°50 DEG CD 611°1 KM
 B LONG 26°33 DEG DA 028°2 KM
 C LAT -44°56 DEG TILT DISTANCE 1.0
 C LONG -102°77 DEG
 D LAT 21°59 DEG
 D LONG -91°07 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 2.09 DEG AB 004.7 KM
 A LONG -32°74 DEG BC 253°0 KM
 B LAT -31°59 DEG CD 001.9 KM
 B LONG -32°35 DEG DA 251°0 KM
 C LAT -32°19 DEG TILT DISTANCE 7.9
 C LONG -38°12 DEG
 D LAT 1°24 DEG
 D LONG -40°99 DEG

MISSION/
FRAME NO.

4138 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 YR, MO, DY 67C521 2670.69 KM TILT ANG 1°28 DEG SUN AZIM 93°97 DEG LATITUDE 13°70 DEG
 HR, MI, SEC 055723.B1 ALT RT 0.0399 KM/SEC TILT AZIM 263°82 DEG INCID ANG 71°68 DEG LONGITUDE -36.45 DEG
 LAT 13°92 DEG SWING ANG 78°40 DEG SWISS ANG 3°26 DEG
 LONG -34°43 DEG N.DEV. 355.05 DEG PHASE ANG 68°48 DEG
 ALPHA 3.20 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 38°39 DEG AB 945.1 KM
 A LONG 32°38 DEG BC 959.8 KM
 B LAT -32°04 DEG CD 522.1 KM
 B LONG 11°81 DEG DA 321.2 KM
 C LAT -15°24 DEG TILT DISTANCE 1.7
 C LONG -92°06 DEG
 D LAT 36°68 DEG
 D LONG -95°13 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 29°59 DEG AB 982.9 KM
 A LONG -30°33 DEG BC 248.5 KM
 B LAT -3.11 DEG CD 988.4 KM
 B LONG -33°92 DEG DA 247.4 KM
 C LAT -2.53 DEG TILT DISTANCE 13°6
 C LONG -42°12 DEG
 D LAT 30.47 DEG
 D LONG -39°72 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 64°12 DEG LATITUDE -14°59' DEG
 INCID ANG 71°23 DEG LONGITUDE -75°28' DEG
 SWISS ANG 1°91 DEG
 PHASE ANG 72°80 DEG
 ALPHA -1°57 DEG

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MISSION/
FRAME NO.

4139 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT RT KM SEC TILT AZIM 1.62 SUN AZIM 108.58 DEG LATITUDE 4.2° 1.6 DEG
 HR. MI. SEC CG25A0.01 ALT RT 0.1622 KM/SEC TILT ANG 102.86 DEG LONGITUDE -28.25 DEG
 LAT 42.81 DEG SWING ANG 267.20 DEG EMISS. ANG 4.32 DEG
 LONG -31.79 DEG N.DEV. 342.05 DEG PHASE ANG 74.07 DEG
 ALPHA -4.31 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 23.50 DEG	AB 922.2 KM		A LAT 56.58 DEG	AB 657.1 KM	
A LONG 34.36 DEG	BC 422.1 KM		A LONG -13.00 DEG	BC 267.7 KM	
B LAT 2.28 DEG	CD 137.2 KM		B LAT 23.68 DEG	CD 658.9 KM	
B LONG 11.89 DEG	DA 141.3 KM		B LONG -29.35 DEG	DA 268.1 KM	
C LAT 2.12 DEG	TILT DISTANCE 2.2		C LAT 25.07 DEG		
C LONG -86.75 DEG			C LONG -29.73 DEG		
D LAT 57.20 DEG			D LAT 61.38 DEG		
D LONG -140.45 DEG			D LONG -25.56 DEG		

MISSION/
FRAME NO.

4140 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT RT 3355.16 KM TILT ANG 1.38 SUN AZIM 127.74 DEG LATITUDE 7.0° 0.5 DEG
 HR. MI. SEC 2702 0.91 ALT RT 0.2452 KM/SEC TILT AZIM 117.64 DEG LONGITUDE -1.5.4 DEG
 LAT 72.21 DEG SWING ANG 297.49 DEG EMISS. ANG 3.45 DEG
 LONG -22.53 DEG N.DEV. 353.99 DFG PHASE ANG 87.54 DEG
 ALPHA -7.44 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 41.51 DEG	AB 157.2 KM	A LAT 82.27 DEG	AB 252.5 KM	
A LONG -1.03.74 DEG	BC 274.2 KM	A LONG 84.15 DFG	BC 315.9 KM	
B LAT 27.72 DEG	CD 925.6 KM	B LAT 49.61 DEG	CD 265.4 KM	
B LONG -90.28 DEG	DA 284.4 KM	B LONG -11.38 DEG	DA 312.2 KM	
C LAT 25.14 DEG	TILT DISTANCE 1.5	C LAT 49.77 DEG		
C LONG -81.32 DEG		C LONG -27.41 DEG		
D LAT 45.71 DEG		D LAT 55.41 DEG		
D LONG -116.12 DEG		D LONG -145.89 DFG		

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MISSION/
FRAME NO.4142 YR, MO, DY
HR, MI, SEC

TIME 670521
 S/C POSITION ALT 3006.60 KM
 ALT RT -0.1974 KM/SEC
 LAT -42.14 DEG
 LONG -45.58 DEG
 N.DEV. 25.91 DEG
 ALPHA ~15.80 DEG

S/C ORIENTATION TILT ANG 5.16 DEG
 TILT AZIM 93.46 DEG
 SWING ANG 291.31 DEG
 N.DEV. 25.91 DEG
 ALPHA ~15.80 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -44.18 DEG AB 308.3 KM
 A LONG -83.57 DEG BC 222.2 KM
 B LAT -51.31 DEG CD 023.3 KM
 B LONG -86.57 DEG DA 259.1 KM
 C LAT -65.56 DEG TILT DISTANCE 7.2
 C LONG -167.18 DEG
 D LAT -3.23 DEG
 D LONG -54.64 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -22.92 DEG AB 149.2 KM
 A LONG -36.65 DEG BC 303.6 KM
 B LAT -55.05 DEG CD 130.5 KM
 B LONG -7.91 DEG DA 287.2 KM
 C LAT -60.90 DEG TILT DISTANCE 55.1
 C LONG -23.16 DEG
 D LAT -25.70 DEG
 D LONG -45.45 DEG

MISSION/
FRAME NO.4143 YR, MO, DY
HR, MI, SEC

TIME 670521
 S/C POSITION ALT 2719.10 KM
 ALT RT -0.0915 KM/SEC
 LAT -14.41 DEG
 LONG -42.98 DEG
 N.DEV. 5.75 DEG
 ALPHA ~2.5n DEG

S/C ORIENTATION TILT ANG 0.98 DEG
 TILT AZIM 85.79 DEG
 SWING ANG 271.17 DEG
 N.DEV. 5.75 DEG
 ALPHA ~2.5n DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 21.79 DEG AB 529.7 KM
 A LONG 7.02 DEG BC 405.9 KM
 B LAT -28.47 DEG CD 595.0 KM
 B LONG 21.53 DEG DA 999.9 KM
 C LAT -46.57 DEG TILT DISTANCE 1.3
 C LONG -111.25 DEG
 D LAT 22.22 DEG
 B LONG -56.13 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.91 DEG AB 1.4 KM
 A LONG -38.01 DEG BC 1.4 KM
 B LAT -73.51 DEG CD 1.4 KM
 B LONG -73.51 DEG DA 752.3 KM
 C LAT -31.39 DEG TILT DISTANCE 10.4
 C LONG -44.18 DEG
 D LAT 2.22 DEG
 D LONG -47.17 DEG

PRINCIPAL POINT LATITUDE ~1.411 DEG
 LONGITUDE -41.41 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	TIME YR, MO, DY Hr, Mi, SEC	S/C POSITION ALT RT LAT LONG	S/C ORIENTATION TILT ANG SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG -PHASE ANG	PRINCIPAL POINT LATITUDE LONGITUDF
4144	670521 175453.61	2668.98 0.0385 13.90 -41.01	0.48 280.39 94.34 354.13	94.27 DEG 70.93 DEG 1.23 DEG -69.71 DEG	14.03 DEG -41.76 DEG
MEDIUM RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
		A LAT 35.15 DEG	AB 961.8 KM	CORNER COORDINATE	SIDE LENGTH
		A LONG 29.73 DEG	BC 941.0 KM	A LAT 29.89 DEG	AB 983.2 KM
		B LAT -30.01 DEG	CD 412.8 KM	A LONG -35.22 DEG	BC 247.1 KM
		B LONG 6.25 DEG	DA 271.0 KM	B LAT -2.76 DEG	CD 985.3 KM
		C LAT -10.07 DEG	TILT DISTANCE	B LONG -39.42 DEG	DA 247.3 KM
		C LONG -86.05 DEG	0.6	C LAT -1.99 DEG	TILT DISTANCE
		D LAT 27.57 DEG		C LONG -47.45 DEG	5.1
		D LONG -94.44 DEG		D LAT 30.87 DEG	
				D LONG -44.62 DEG	
HIGH RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH		
		A LAT 2868.11 KM	AB 979.5 KM		
		ALT RT 0.1612 KM/SEC	BC 466.9 KM		
		LAT 42.81 DEG	CD 126.1 KM		
		LONG -38.27 DEG	DA 236.2 KM		
MEDIUM RESOLUTION					
		CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
		A LAT 17.85 DEG	AB 979.5 KM	CORNER COORDINATE	SIDE LENGTH
		A LONG 34.63 DEG	BC 466.9 KM	A LAT 56.29 DEG	AB 057.4 KM
		B LAT -0.79 DEG	CD 126.1 KM	A LONG -14.35 DEG	BC 267.3 KM
		B LONG 7.23 DEG	DA 236.2 KM	B LAT 23.96 DEG	CD 057.3 KM
		C LAT 2.03 DEG	TILT DISTANCE	B LONG -35.44 DEG	DA 269.2 KM
		C LONG -92.77 DEG	2.8	C LAT 26.62 DEG	TILT DISTANCE
		D LAT 57.16 DEG		C LONG -44.76 DEG	21.8
		D LONG -155.02 DEG		D LAT 60.49 DEG	
				D LONG -29.37 DEG	

MISSION/
FRAME NO.TIME
YR, MO, DY
Hr, Mi, SECS/C POSITION
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
-PHASE ANGPRINCIPAL POINT
LATITUDE
LONGITUDFTIME
YR, MO, DY
Hr, Mi, SECS/C POSITION
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
-PHASE ANGPRINCIPAL POINT
LATITUDE
LONGITUDFTIME
YR, MO, DY
Hr, Mi, SECS/C POSITION
ALT RT
LAT
LONGS/C ORIENTATION
TILT ANG
SWING ANG
N.DEV.PHOTO ILLUMINATION
SUN AZIM
INCID ANG
EMISS ANG
-PHASE ANGPRINCIPAL POINT
LATITUDE
LONGITUDF

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

4146
YR, MO, DY
HR, MI, SEC

TIME
670521
233C24.91

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 6147.89 KM	TILT ANG 0.82 DEG	SUN AZIM 271.70 DEG	LATITUDE 2.79 DEG
ALT RT 0.0273 KM/SEC	TILT AZIM 25.12 DEG	INCID ANG 110.12 DEG	LONGITUDE 136.09 DEG
LAT 0.16 DEG	SWING ANG 44.82 DEG	EMISS ANG 3.73 DEG	
LONG 134.86 DEG	N.DEV. 199.62 DEG	PHASE ANG 108.60 DEG	
	ALPHA 1.56 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT C* DEG	AB 0* KM	CORNER COORDINATE SIDE LENGTH
A LONG C* DEG	BC 0* KM	A LAT -43.04 DEG AB 390.9 KM
B LAT C* DEG	CD 0* KM	A LONG 141.69 DEG BC 612.1 KM
B LONG C* DEG	DA 0* KM	B LAT 43.44 DEG CD 409.7 KM
C LAT C* DEG	DE TILT DISTANCE 1.1	B LONG 105.23 DEG DA 593.5 KM
C LONG C* DEG	DE	C LAT 50.60 DEG TILT DISTANCE 8.7
D LAT C* DEG	DE	C LONG 130.62 DEG
D LONG C* DEG	DE	D LAT -32.16 DEG D LONG 164.12 DEG

MISSION/
FRAME NO.

4147
YR, MO, DY
HR, MI, SEC

TIME
670521
233056.51

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 6148.74 KM	TILT ANG 0.69 DEG	SUN AZIM 271.45 DEG	LATITUDE 2.09 DEG
ALT RT 0.0266 KM/SEC	TILT AZIM 31.43 DEG	INCID ANG 110.19 DEG	LONGITUDE 136.14 DEG
LAT 0.00 DEG	SWING ANG 51.13 DEG	EMISS ANG 3.14 DEG	
LONG 134.87 DEG	N.DEV. 199.64 DEG	PHASE ANG 108.60 DEG	
	ALPHA 1.62 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT C* DEG	AB 0* KM	CORNER COORDINATE SIDE LENGTH
A LONG C* DEG	BC 0* KM	A LAT -41.13 DEG AB 387.1 KM
B LAT C* DEG	CD 0* KM	A LONG 141.90 DEG BC 609.0 KM
B LONG C* DEG	DA 0* KM	B LAT 39.35 DEG B LONG 105.59 DEG DA 595.3 KM
C LAT C* DEG	DE TILT DISTANCE 0.9	C LAT 49.20 DEG C LONG 130.84 DEG TILT DISTANCE 7.3
C LONG C* DEG	DE	D LAT -33.11 DEG D LONG 164.63 DEG
D LAT C* DEG	DE	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 3009.38 KM

SUN AZIM 71.65 DEG

TILT ANG 4.62 DEG

LATITUDE -42.95 DEG

TILT AZIM 99.63 DEG

LONGITUDE -41.38 DEG

ALT RT -0.1980 KM/SEC

SWING ANG 297.27 DEG

INCID ANG 72.12 DEG

EMISS ANG 12.73 DEG

LAT -42.11 DEG

PHASE ANG 84.07 DEG

LONG -52.33 DEG

ALPHA -12.00 DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 2726.27 KM

SUN AZIM 84.42 DEG

TILT ANG 0.68 DEG

LATITUDE -15.05 DEG

ALT RT -0.2924 KM/SEC

INCID ANG 72.45 DEG

SWING ANG 312.97 DEG

LONGITUDE -48.76 DEG

LAT -14.40 DEG

EMISS ANG 1.75 DEG

PHASE ANG 73.75 DEG

LONG -49.54 DEG

ALPHA -1.29 DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 475.5 KM

SUN AZIM 84.42 DEG

TILT ANG 0.68 DEG

LATITUDE -15.05 DEG

ALT RT -0.2924 KM/SEC

INCID ANG 72.45 DEG

SWING ANG 312.97 DEG

LONGITUDE -48.76 DEG

LAT -14.40 DEG

EMISS ANG 1.75 DEG

PHASE ANG 73.75 DEG

LONG -49.54 DEG

ALPHA -1.29 DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 475.5 KM

SUN AZIM 84.42 DEG

TILT ANG 0.68 DEG

LATITUDE -15.05 DEG

ALT RT -0.2924 KM/SEC

INCID ANG 72.45 DEG

SWING ANG 312.97 DEG

LONGITUDE -48.76 DEG

LAT -14.40 DEG

EMISS ANG 1.75 DEG

PHASE ANG 73.75 DEG

LONG -49.54 DEG

ALPHA -1.29 DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 388.5 KM

SUN AZIM 84.42 DEG

TILT ANG 0.68 DEG

LATITUDE -15.05 DEG

ALT RT -0.2924 KM/SEC

INCID ANG 72.45 DEG

SWING ANG 312.97 DEG

LONGITUDE -48.76 DEG

LAT -14.40 DEG

EMISS ANG 1.75 DEG

PHASE ANG 73.75 DEG

LONG -49.54 DEG

ALPHA -1.29 DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 393.2 KM

SUN AZIM 84.42 DEG

TILT ANG 0.68 DEG

LATITUDE -15.05 DEG

ALT RT -0.2924 KM/SEC

INCID ANG 72.45 DEG

SWING ANG 312.97 DEG

LONGITUDE -48.76 DEG

LAT -14.40 DEG

EMISS ANG 1.75 DEG

PHASE ANG 73.75 DEG

LONG -49.54 DEG

ALPHA -1.29 DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

ALT 475.5 KM

SUN AZIM 84.42 DEG

TILT ANG 0.68 DEG

LATITUDE -15.05 DEG

ALT RT -0.2924 KM/SEC

INCID ANG 72.45 DEG

SWING ANG 312.97 DEG

LONGITUDE -48.76 DEG

LAT -14.40 DEG

EMISS ANG 1.75 DEG

PHASE ANG 73.75 DEG

LONG -49.54 DEG

ALPHA -1.29 DEG

LUNAR CRBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/13/71

MISSION/
FRAME NO.4150
YR, MO, DY
HR, MI, SEC

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT

670522 ALT 2668.38 KM TILT ANG 1.33 DEG SUN AZIM 93.45 DEG LATITUDE 12.70 DEG

06CC11.81 ALT RT 0.2374 KM/SEC TILT AZIM 234.31 DEG INCID ANG 72.21 DEG LONGITUDE -49.29 DEG

LAT 13.91 DEG SWING ANG 48.11 DEG EMISS ANG 3.39 DEG

LONG -47.59 DEG N.OEV. 354.44 DEG PHASE ANG 69.63 DEG

 ALPHA 2.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 37.22 DEG AB 932.0 KM

A LONG 18.84 DEG BC 939.7 KM

B LAT -31.15 DEG CD 524.5 KM

B LONG -11.39 DEG DA 240.2 KM

C LAT -16.68 DEG TILT DISTANCE 1.8

C LONG -106.64 DEG

D LAT -25.43 DEG

D LONG -101.35 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 28.38 DEG AB 983.6 KM

A LONG -43.06 DEG BC 249.5 KM

B LAT -4.32 DEG CD 987.9 KM

B LONG -45.90 DEG DA 245.6 KM

C LAT -3.64 DEG TILT DISTANCE 14.2

C LONG -55.13 DEG

D LAT 29.31 DEG

D LONG -52.26 DEG

MISSION/
FRAME NO.4151
YR, MO, DY
HR, MI, SEC

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT

670522 ALT 2865.88 KM TILT ANG 2.36 DEG SUN AZIM 108.28 DEG LATITUDE 40.89 DEG

063227.51 ALT RT 0.1605 KM/SEC TILT AZIM 116.62 DEG INCID ANG 69.15 DEG LONGITUDE -40.20 DEG

LAT 42.84 DEG SWING ANG 281.94 DEG EMISS ANG 6.26 DEG

LONG -44.74 DEG N.OEV. 340.45 DEG PHASE ANG 75.25 DEG

 ALPHA -6.10 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 16.49 DEG AB 192.2 KM

A LONG 26.93 DEG BC 588.8 KM

B LAT -5.74 DEG CD 588.2 KM

B LONG 5.69 DEG DA 149.5 KM

C LAT 0.61 DEG TILT DISTANCE 3.2

C LONG -98.98 DEG

D LAT 59.78 DEG

D LONG -158.69 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 54.78 DEG AB 968.1 KM

A LONG -21.97 DEG BC 269.9 KM

B LAT 22.17 DEG CD 056.5 KM

B LONG -41.78 DEG DA 267.4 KM

C LAT 24.90 DEG TILT DISTANCE 25.1

C LONG -51.04 DEG

D LAT 58.79 DEG

D LONG -36.39 DEG

Lunar Orbiter Photographic Supporting Data

Lunar Orbiter Photographic Supporting Data

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LUNAR CRIBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/ FRAME NO.		TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
4152	YR, MO, DY	670522		ALT	3343.90 KM	TIILT ANG	1.54 DEG	SUN AZIM	126.43 DEG	LATITUDE	59.78 DEG
	HR, MI, SEC	071443.71		ALT RT	0.2445 KM/SEC	TIILT AZIM	142.91 DEG	INCID ANG	76.99 DEG	LONGITUDE	-29.61 DEG
				LAT	72.22 DEG	SWING ANG	321.09 DEG	EMISS ANG	4.51 DEG		
				LONG	-34.79 DEG	N.DEV.	353.36 DEG	PHASE ANG	81.19 DEG		
								ALPHA	-4.21 DEG		
MEDIUM RESOLUTION											
MISSION/ FRAME NO.		TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
4154	YR, MO, DY	670522		ALT	3613.43 KM	TIILT ANG	5.17 DEG	SUN AZIM	52.23 DEG	LATITUDE	-71.70 DEG
	HR, MI, SEC	161555.31		ALT RT	-0.2602 KM/SEC	TIILT AZIM	105.18 DEG	INCID ANG	79.22 DEG	LONGITUDE	-33.51 DEG
				LAT	-72.06 DEG	SWING ANG	267.90 DEG	EMISS ANG	15.12 DEG		
				LONG	-59.24 DEG	N.DEV.	16.00 DEG	PHASE ANG	94.49 DEG		
								ALPHA	-15.31 DEG		
HIGH RESOLUTION											
MISSION/ FRAME NO.		TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
4154	YR, MO, DY	670522		ALT	332.3 KM	TIILT ANG	1.54 DEG	SUN AZIM	126.43 DEG	LATITUDE	59.78 DEG
	HR, MI, SEC	161555.31		ALT RT	-0.2602 KM/SEC	TIILT AZIM	142.91 DEG	INCID ANG	76.99 DEG	LONGITUDE	-29.61 DEG
				LAT	72.22 DEG	SWING ANG	321.09 DEG	EMISS ANG	4.51 DEG		
				LONG	-34.79 DEG	N.DEV.	353.36 DEG	PHASE ANG	-4.21 DEG		
								ALPHA	-15.31 DEG		
HIGH RESOLUTION											
MISSION/ FRAME NO.		TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
4154	YR, MO, DY	670522		ALT	332.3 KM	TIILT ANG	1.54 DEG	SUN AZIM	126.43 DEG	LATITUDE	59.78 DEG
	HR, MI, SEC	161555.31		ALT RT	-0.2602 KM/SEC	TIILT AZIM	142.91 DEG	INCID ANG	76.99 DEG	LONGITUDE	-29.61 DEG
				LAT	72.22 DEG	SWING ANG	321.09 DEG	EMISS ANG	4.51 DEG		
				LONG	-34.79 DEG	N.DEV.	353.36 DEG	PHASE ANG	-4.21 DEG		
								ALPHA	-15.31 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

4155
 YR, MO, DY 670522
 HR, MI, SEC 165826.41

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	301.09 KM	TILT ANG 4.30 DEG	SUN AZIM 72.75 DEG	LATITUDE -42.41 DEG	
ALT RT	-0.1982 KM/SEC	TILT AZIM 95.99 DEG	INCID ANG 72.95 DEG	LONGITUDE -48.89 DEG	
LAT	-42.07 DEG	SWING ANG 293.53 DEG	EMISS ANG 11.84 DEG		
LONG	-59.37 DEG	N.DEV. 24.37 DEG	PHASE ANG 84.33 DEG		
			ALPHA -11.41 DEG		

MISSION/
FRAME NO.

4156
 YR, MO, DY 670522
 HR, MI, SEC 173C43.11

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	2721.54 KM	TILT ANG 0.43 DEG	SUN AZIM 84.73 DEG	LATITUDE -14.88 DEG	
ALT RT	-0.0928 KM/SEC	TILT AZIM 136.05 DEG	INCID ANG 73.36 DEG	LONGITUDE -55.80 DEG	
LA	-14.39 DEG	SWING ANG 321.40 DEG	EMISS ANG 1.10 DEG		
LONG	-56.29 DEG	N.DEV. 5.48 DEG	PHASE ANG 74.05 DEG		
			ALPHA -0.70 DEG		

MISSION/
FRAME NO.

4156
 YR, MO, DY 670522
 HR, MI, SEC 173C43.11

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	2721.54 KM	TILT ANG 0.43 DEG	SUN AZIM 84.73 DEG	LATITUDE -14.88 DEG	
ALT RT	-0.0928 KM/SEC	TILT AZIM 136.05 DEG	INCID ANG 73.36 DEG	LONGITUDE -55.80 DEG	
LA	-14.39 DEG	SWING ANG 321.40 DEG	EMISS ANG 1.10 DEG		
LONG	-56.29 DEG	N.DEV. 5.48 DEG	PHASE ANG 74.05 DEG		
			ALPHA -0.70 DEG		

MISSION/
FRAME NO.

4156
 YR, MO, DY 670522
 HR, MI, SEC 173C43.11

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	2721.54 KM	TILT ANG 0.43 DEG	SUN AZIM 84.73 DEG	LATITUDE -14.88 DEG	
ALT RT	-0.0928 KM/SEC	TILT AZIM 136.05 DEG	INCID ANG 73.36 DEG	LONGITUDE -55.80 DEG	
LA	-14.39 DEG	SWING ANG 321.40 DEG	EMISS ANG 1.10 DEG		
LONG	-56.29 DEG	N.DEV. 5.48 DEG	PHASE ANG 74.05 DEG		
			ALPHA -0.70 DEG		

MISSION/
FRAME NO.

4156
 YR, MO, DY 670522
 HR, MI, SEC 173C43.11

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	2721.54 KM	TILT ANG 0.43 DEG	SUN AZIM 84.73 DEG	LATITUDE -14.88 DEG	
ALT RT	-0.0928 KM/SEC	TILT AZIM 136.05 DEG	INCID ANG 73.36 DEG	LONGITUDE -55.80 DEG	
LA	-14.39 DEG	SWING ANG 321.40 DEG	EMISS ANG 1.10 DEG		
LONG	-56.29 DEG	N.DEV. 5.48 DEG	PHASE ANG 74.05 DEG		
			ALPHA -0.70 DEG		

MISSION/
FRAME NO.

4156
 YR, MO, DY 670522
 HR, MI, SEC 173C43.11

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	2721.54 KM	TILT ANG 0.43 DEG	SUN AZIM 84.73 DEG	LATITUDE -14.88 DEG	
ALT RT	-0.0928 KM/SEC	TILT AZIM 136.05 DEG	INCID ANG 73.36 DEG	LONGITUDE -55.80 DEG	
LA	-14.39 DEG	SWING ANG 321.40 DEG	EMISS ANG 1.10 DEG		
LONG	-56.29 DEG	N.DEV. 5.48 DEG	PHASE ANG 74.05 DEG		
			ALPHA -0.70 DEG		

LUNAR CRATERS PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSONI

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	36°-51 DEG	AB 010.5
A LONG	15°-46 DEG	BC 959.7
B LAT	-32°-08 DEG	CD 498.9
B LONG	-7°-05 DEG	DA 259.7
C LAT	-15°-17 DEG	TIKT DIST
C LONG	-112°-45 DEG	1.9
D LAT	36°-29 DEG	
D LONG	-112°-27 DEG	

MISSION /

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
AL 1	2865.52 KH	TILT ANG 1.57 DEG	LATITUDE 41.99 DEG
ALT RT	0.1601 KH/SEC	TILT AZIM 106.83 DEG	LONGITUDE -47.66 DEG
LAT	42.85 DEG	SWING ANG 270.57 DEG	
LONG	-51.22 DEG	N.DEV. 341.50 DEG	
		PHASE ANG 74.88 DEG	
		ALPHA -4.43 DEG	

MEDIUM RESOLUTION		SIDE LENGTH
CCNER COORDINATE		
A LAT	23°51' DEG	AB S21°2' KI
A LONG	14°27' DEG	BC 424°1' KI
B LAT	1°36' DEG	CD 975.7' KI
B LONG	-7°77' DEG	DA 217.5' KI
C LAT	2°56' DEG	TILT DISTANCE
C LONG	-106°16' DEG	2.3
D LAT	5°16' DEG	
D LONG	-56°54' DEG	

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PRINCIPAL POINT
LATITUDE 13° 36' DEG
LONGITUDE -56° 27' DEG

HIGH RESOLUTION					
CORNER	COORDINATE	SIDE			
A LAT	29°.17 DEG	AB	S		
A LONG	-50°.12 DEG	BC	2		
B LAT	-53°.51 DEG	CD	9		
B LONG	-53°.80 DEG	DA	1		
C LAT	-52°.91 DEG	TILT			
C LONG	-62°.01 DEG				
D LAT	30°.07 DEG				
D LONG	-59°.45 DEG				

PHOTO ILLUMINATION	SUN AZIM	107°-65 DEG	LATITUDE	41°-99 DEG
INCID ANG	70°-45 DEG	LONGITUDE	-47°-66 DEG	
EMISS ANG	4°-44 DEG			
PHASE ANG	74°-88 DEG			
ALPHA	-4°-43 DEG			

SIDE	LENGTH	TILT DISTANCE
AB	064.6	KH
BC	267.4	KM
CD	056.3	KM
DA	267.3	KM
		17.8

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

4166 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 57C522 ALT 3012.07 KM TILT ANG 4.76 DEG SUN AZIM 72.28 DEG LATITUDE -42.79 DEG
 HR, MI, SEC 045516.71 ALT RT -0.1980 KM/SEC TILT AZIM 99.03 DEG INCID ANG 72.74 DEG LONGITUDE -54.52 DEG
 LAT -42.03 DEG SWING ANG 296.34 DEG EMISS ANG 13.12 DEG
 LONG -65.87 DEG N.DEV. 24.97 DEG PHASE ANG 35.18 DEG
 ALPHA -12.48 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -44.02 DEG AB 343.6 KM
 A LONG -106.18 DEG BC 225.4 KM
 B LAT -51.15 DEG CD 005.5 KM
 B LONG -105.23 DEG DA 311.6 KM
 C LAT -61.84 DEG TILT DISTANCE 6.6
 C LONG 179.45 DEG
 D LAT 2.80 DEG
 D LONG -116.74 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT -33.76 DEG AB 149.5 KM
 A LONG -57.73 DEG BC 299.1 KM
 B LAT -56.24 DEG CD 123.7 KM
 B LONG -28.96 DEG DA 284.5 KM
 C LAT -61.94 DEG TILT DISTANCE 55.8
 C LONG -44.77 DEG
 D LAT -27.29 DEG
 D LONG -67.38 DEG

MISSION/
FRAME NO.

4161 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 67C523 ALT 2722.65 KM TILT ANG 0.77 DEG SUN AZIM 84.66 DEG LATITUDE -151.3 DEG
 HR, MI, SEC 053134.11 ALT RT -0.0927 KM/SEC TILT AZIM 129.88 DEG INCID ANG 73.46 DEG LONGITUDE -61.98 DEG
 LAT -14.36 DEG SWING ANG 314.84 DEG EMISS ANG 1.97 DEG
 LONG -62.94 DEG N.DEV. 5.22 DEG PHASE ANG 74.86 DEG
 ALPHA -1.40 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 17.67 DEG AB 489.5 KM
 A LONG -15.14 DEG BC 407.9 KM
 B LAT -30.22 DEG CD 392.7 KM
 B LONG 0.15 DEG DA 048.4 KM
 C LAT -38.37 DEG TILT DISTANCE 1.0
 C LONG -113.73 DEG
 D LAT 22.05 DEG
 D LONG -116.07 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT 1.91 DEG AB 005.5 KM
 A LONG -59.28 DEG BC 253.6 KM
 B LAT -31.57 DEG CD 004.0 KM
 B LONG -55.21 DEG DA 251.2 KM
 C LAT -32.39 DEG TILT DISTANCE 0.1
 C LONG -65.04 DEG
 D LAT 1.15 DEG
 D LONG -67.55 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -23.76 DEG AB 149.5 KM
 A LONG -57.73 DEG BC 299.1 KM
 B LAT -56.24 DEG CD 123.7 KM
 B LONG -28.96 DEG DA 284.5 KM
 C LAT -61.94 DEG TILT DISTANCE 55.8
 C LONG -44.77 DEG
 D LAT -27.29 DEG
 D LONG -67.38 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 1.91 DEG AB 005.5 KM
 A LONG -59.28 DEG BC 253.6 KM
 B LAT -31.57 DEG CD 004.0 KM
 B LONG -55.21 DEG DA 251.2 KM
 C LAT -32.39 DEG TILT DISTANCE 0.1
 C LONG -65.04 DEG
 D LAT 1.15 DEG
 D LONG -67.55 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 72.28 DEG LATITUDE -42.79 DEG
 INCID ANG 72.74 DEG LONGITUDE -54.52 DEG
 EMISS ANG 13.12 DEG
 PHASE ANG 35.18 DEG
 ALPHA -12.48 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 84.66 DEG LATITUDE -151.3 DEG
 INCID ANG 73.46 DEG LONGITUDE -61.98 DEG
 EMISS ANG 1.97 DEG
 PHASE ANG 74.86 DEG
 ALPHA -1.40 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
4162	570523 YR.MD.DY HR.MI.SEC	ALT 2669.91 KH 0.0368 KH/SEC LAT 13.93 DEG LONG -60.75 DEG	1.C1 TILT ANG 243.18 DEG SWING ANG 57.01 DEG N.DEV. 354.14 DEG	SUN AZIM 93.41 DEG INCID ANG 72.91 DEG SWISS ANG 2.56 DEG PHASE ANG 70.71 DEG	LATITUDE 13.22 DEG LONGITUDE -62.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 36.42 DEG A LONG 6.54 DEG B LAT -30.88 DEG B LONG -14.52 DEG C LAT -13.43 DEG C LONG -113.64 DEG D LAT 36.41 DEG D LONG -114.78 DEG	AB 953.1 KM BC 937.3 KM CD 463.5 KM DA 253.7 KM TILT DISTANCE 1.4	A LAT 28.95 DEG A LONG -55.78 DEG B LAT -3.72 DEG B LONG -59.86 DEG C LAT -2.98 DEG C LONG -68.06 DEG D LAT 29.93 DEG D LONG -65.05 DEG	AB 983.5 KM BC 248.8 KM CD 987.2 KM DA 246.3 KM TILT DISTANCE 12.7

HIGH RESOLUTION

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
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ALT 2866.65 KH 0.1600 KM/SEC LAT 42.87 DEG LONG -57.71 DEG	TILT ANG 2.19 DEG TILT AZIM 115.82 DEG SWING ANG 278.83 DEG N.DEV. 340.23 DEG	SUN AZIM 107.65 DEG INCID ANG 69.93 DEG EAVSS ANG 5.81 DEG PHASE ANG 75.63 DEG	LATITUDE 41.21 DEG LONGITUDE -53.38 DEG
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HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
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A LAT 18.01 DEG A LONG 11.53 DEG B LAT -6.15 DEG B LONG -8.65 DEG C LAT 0.84 DEG C LONG -112.77 DEG D LAT 55.74 DEG D LONG -171.50 DEG	AB 098.2 KM BC 576.0 KM CD 000.4 KM DA 140.2 KM TILT DISTANCE 3.9	A LAT 55.09 DEG A LONG -34.90 DEG B LAT 22.58 DEG B LONG -55.05 DEG C LAT 25.30 DEG C LONG -64.31 DEG D LAT 59.16 DEG D LONG -49.41 DEG	AB 057.4 KM BC 259.3 KM CD 056.6 KM DA 267.5 KM TILT DISTANCE 23.3
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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

4164
YR. MO. DY 670523
HR. MI. SEC 071245.81

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 3345.72 KM ALT RT 0.2442 KM/SEC	TILT ANG 1.42 DEG TILT AZIM 136.16 CEG SWING ANG 213.12 CEG N.DEV. 351.71 DEG	SUN AZIM 126.80 DEG INCID ANG 77.12 DEG EMISS ANG 4.16 DEG PHASE ANG 81.15 DEG ALPHA -4.03 DEG	LATITUDE 70.19 DEG LONGITUDE -41.50 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 42.72 DEG A LONG -126.59 DEG	AB 198.7 KM BC 274.5 KM
B LAT 38.35 DEG B LONG -116.37 DEG	CD 632.5 KM DA 737.3 KM
C LAT 24.22 DEG C LONG -118.00 DEG	TILT DISTANCE 1.9
D LAT 25.26 DEG D LONG -159.86 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 51.78 DEG A LONG 48.59 DEG	AB 250.9 KM BC 316.6 KM
B LAT 47.93 DEG B LONG -37.96 DEG	CD 243.8 KM DA 310.6 KM
C LAT 48.93 DEG C LONG -53.68 DEG	TILT DISTANCE 15.1
D LAT 87.66 DEG D LONG -165.31 DEG	

MISSION/
FRAME NO.

4165
YR. MO. DY 670523
HR. MI. SEC 054325.91

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 5486.57 KM ALT RT 0.1707 KM/SEC	TILT ANG 7.59 DEG TILT AZIM 280.13 DEG SWING ANG 281.67 CEG N.DEV. 190.78 DEG	SUN AZIM 259.41 DEG INCID ANG 76.08 DEG EMISS ANG 33.33 DEG PHASE ANG 108.75 DEG ALPHA -32.76 DEG	LATITUDE 36.84 DEG LONGITUDE 81.13 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 16.76 DEG A LONG 155.14 DEG	AB 116.3 KM BC 418.2 KM
B LAT 27.23 DEG B LONG 168.91 DEG	CD 591.9 KM DA 330.0 KM
C LAT 29.02 DEG C LONG -155.40 DEG	TILT DISTANCE 10.5
D LAT -1.49 DEG D LONG 154.61 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -4.99 DEG A LONG 66.84 DEG	AB 478.3 KM BC 881.0 KM
B LAT 55.86 DEG B LONG 20.71 DEG	CD 197.5 KM DA 796.4 KM
C LAT 78.34 DEG C LONG 41.92 DEG	TILT DISTANCE 81.3
D LAT 4.04 DEG D LONG 91.79 DEG	

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 126.80 KM ALT RT 0.1707 KM/SEC	TILT ANG 7.59 DEG TILT AZIM 280.13 DEG SWING ANG 281.67 CEG N.DEV. 190.78 DEG	SUN AZIM 259.41 DEG INCID ANG 76.08 DEG EMISS ANG 33.33 DEG PHASE ANG 108.75 DEG ALPHA -32.76 DEG	LATITUDE 70.19 DEG LONGITUDE -41.50 DEG

CORNER COORDINATE	SIDE LENGTH
A LAT 51.78 DEG A LONG 47.93 DEG	AB 250.9 KM BC 316.6 KM
B LAT 47.93 DEG B LONG -37.96 DEG	CD 243.8 KM DA 310.6 KM
C LAT 48.93 DEG C LONG -53.68 DEG	TILT DISTANCE 15.1
D LAT 87.66 DEG D LONG -165.31 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/12/71

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MISSION /
EDMONTON NO.
4165

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME 161141-71:	ALT 3597.6N ALT HGT -3.7592 KM/SFC	TI LT ANG 3.41 DEG TI LT AZIM 121.40 CFG SWING ANG 264.73 DEG N.oDEV. 3.43 DEG	SUN AZIM 65.38 DEG INCID ANG A3.20 DEG EMISS ANG 12.51 DEG PHASE ANG 93.23 DEG	LATITUDE -71.31 DEG LONGITUDE -60.23 DEG
LAT LONG	-75.10 DEG -82.44 DEG			

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A	LAT -28°.76 DEG	AB 175.
A	LAT -131°.79 DEG	BC 276.
B	LAT -42°.79 DEG	CD 659.
H	LONG -142°.25 DEG	DA 584.
C	LAT -28°.43 DEG	TILT D1
C	LONG 178°.41 DEG	4.
D	LAT -5°.45 DEG	
D	LONG -116°.74 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	-47.19	DEG
A LONG	-52.42	DEG
B LAT	-81.09	DEG
B LONG	55.68	DEG
C LAT	-84.69	DEG
C LONG	159.69	DEG
D LAT	-48.37	DEG
D LONG	-69.52	DEG

YR AND
FRAME NO.
4157

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
4.99	72.56 DEG	-42.01 DEG
TILT AZIM	INCID ANG	LONGITUDE
95.16	72.58 DEG	-60.70 DEG
SWING ANG	MISS ANG	
292.44	13.75 DEG	
N.DEV.	PHASE ANG	
25.08	85.90 DEG	
	ALPHA	-13.35 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	-42°•63 DEG	AB 321.
A LONG	-111°•34 DEG	BC 221.
B LAT	-52°•76 DEG	CD 421.
B LONG	-114°•10 DEG	DA 235.
C LAT	-64°•53 DEG	TILT DI
C LONG	166°•33 DEG	6.
D LAT	-2°•64 DEG	
D LONG	-121°•15 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	-22.68	DEG
A LONG	-63.40	DEG
B LAT	+55.35	DEG
B LONG	-35.59	DEG
C LAT	-61.02	DEG
C LONG	-51.11	DEG
D LAT	-26.43	DEG
D LONG	+31.52	DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/10/21

MISSIONS

TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
	ALT	KM	TILT ANG	CEG	SUN AZIM	B4-E7 DEG	LATITUDE	-14-45 DEG
77C023	2722.14	KM	0.38	CEG	84-E7 DEG	INCID ANG	73-53 DEG	
773730E.81	ALT RT	-0.0912 KM/SEC	TILT AZIM	103-11 DEG	INCID ANG	73-53 DEG	LONGITUDE	-58.18 DEG
	LAT	-14-14 DEG	SWING ANG	288-79 CEG	EMISS ANG	2-22 DEG		
	LONG	-69-56 DEG	N-DEV.	5-29 CEG	CHASS ANG	75-65 DEG		
					ALPHA	-2-15 DEG		

MEDIUM RESOLUTION		SIDE LINE
CORNER	COORDINATE	
A	LAT 1°44'48" DEG	AB 422.1
B	LONG -22°35'30" DEG	BC 422.1
C	LAT -25°33'30" DEG	CD 695.1
D	LONG -4°10'30" DEG	DA 548.1
A	LAT -45°39'30" DEG	TILT DI
C	LONG -137°39'30" DEG	1.
B	LAT 21°64'30" DEG	
D	LONG -121°87'30" DEG	

HIGH RESOLUTION					
CORNER	COORDINATES	SIDE LENGTH	LEN	ANGLE	DIS
A LAT	2.68 DEG	48	045.7		
A LONG	-55.46 DEG	6C	253.1		
B LAT	-30.80 DEG	CD	026.9		
B LONG	-61.41 DEG	DA	261.9		
C LAT	-31.61 DEG	TILT	DIS		
C LONG	-71.14 DEG				
D LAT	1.88 DEG				
D LONG	-73.74 DEG				

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 0.38	SUN AZIM 84.87 DEG	LATITUDE -14.45 DEG
TILT AZIM 103.11	INCID ANG 73.53 DEG	LONGITUDE -58.18 DEG
SWING ANG 288.74	EMISS ANG 2.25 DEG	
N.DEV. 5.29	PHASE ANG 75.65 DEG	
	ALPHA -3.15 DEG	

COLLOCATION	SIDE	LENGTH
TS	AB	045.7 KM
DEG	BC	253.1 KM
DEG	CD	072.9 KM
DEG	DA	251.9 KM
DEG	TILT	DISTANCE
DEG	9.3.	

MISSION /
NAME NO.

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
670523	ALT 2.672.02 KM ALT RT 0.0382 KM/SEC	TIILT ANG 0.78 DEG TIILT AZIM 248.53 DEG SWING ANG 62.11 DEG N.DEV. 353.85 DEG	SUN AZIM 93.49 DEG INCID ANG 73.14 DEG EMISS ANG 1.99 DEG PHASE ANG 71.34 DEG	LATITUDE 13.59 DEG LONGITUDE -68.49 DEG
1803 2.01	LAT 14.14 DEG LONG -67.33 DEG			ALPHA 1.80 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A	LAT 35°75' DEG	AB 19.6
A	LONG 2°75' DEG	BC 955.5
B	LAT -30°84' DEG	CD 439.3
B	LONG -20°51' DEG	DA 250.1
C	LAT -11°75' DEG	TILT DIS 1.0
C	LONG -117°75' DEG	
D	LAT 37°13' DEG	
D	LONG -121°02' DEG	

HIGH RESOLUTION		SID	TIL
CORNER	COORDINATE		
A LAT	29°44' AB	DEG	
A LONG	-61°93' BC	DEG	
B LAT	-3°23' CD	DEG	
B LONG	-65°24' DA	DEG	
C LAT	-2°44' DE	DEG	
C LONG	-74°42' DEG		
D LAT	30°47' DEG		
D LONG	105°45' DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

TIME
YR.HD.DY
HR.MI.SECS/C POSITION
ALT 2870.53 KM
ALT RT 0.1607 KM/SEC
LAT 43.00 DEG
LONG -64.22 DEG .
N.DEV. .S/C ORIENTATION
TILT ANG 2.19 DEG
TILT AZIM 108.25 DEG
SWING ANG 270.83 DEG
N.DEV. .PHOTO ILLUMINATION
SUN AZIM 107.74 DEG
INCID ANG 75.18 DEG
EMIS ANG 5.81 DEG
PHASE ANG 75.98 DEG
ALPHA -5.80 DEGPRINCIPAL POINT
LATITUDE 4.77 DEG
LONGITUDE -59.63 DEG

MISSION/

FRAME NO.

TIME
YR.HD.DY
HR.MI.SECS/C POSITION
ALT 5800.00 KM
ALT RT -0.1259 KM/SEC
LAT -34.03 DEG
LONG 110.74 DEGS/C ORIENTATION
TILT ANG 118.92 DEG
TILT AZIM 307.96 DEG
SWING ANG 37.86 DEG
N.DEV. .PHOTO ILLUMINATION
SUN AZIM 269.11 DEG
INCID ANG 94.21 DEG
EMIS ANG 137.86 DEG
PHASE ANG 114.05 DEG
ALPHA -29.02 DEGPRINCIPAL POINT
LATITUDE -21.34 DEG
LONGITUDE 94.79 DEG

MISSION/

FRAME NO.

TIME
YR.HD.DY
HR.MI.SECS/C POSITION
ALT 5800.00 KM
ALT RT -0.1259 KM/SEC
LAT -34.03 DEG
LONG 110.74 DEGS/C ORIENTATION
TILT ANG 118.92 DEG
TILT AZIM 307.96 DEG
SWING ANG 37.86 DEG
N.DEV. .PHOTO ILLUMINATION
SUN AZIM 269.11 DEG
INCID ANG 94.21 DEG
EMIS ANG 137.86 DEG
PHASE ANG 114.05 DEG
ALPHA -29.02 DEGPRINCIPAL POINT
LATITUDE -21.34 DEG
LONGITUDE 94.79 DEG

MISSION/

FRAME NO.

TIME
YR.HD.DY
HR.MI.SECS/C POSITION
ALT 5800.00 KM
ALT RT -0.1259 KM/SEC
LAT -34.03 DEG
LONG 110.74 DEGS/C ORIENTATION
TILT ANG 118.92 DEG
TILT AZIM 307.96 DEG
SWING ANG 37.86 DEG
N.DEV. .PHOTO ILLUMINATION
SUN AZIM 269.11 DEG
INCID ANG 94.21 DEG
EMIS ANG 137.86 DEG
PHASE ANG 114.05 DEG
ALPHA -29.02 DEGPRINCIPAL POINT
LATITUDE -21.34 DEG
LONGITUDE 94.79 DEG

MISSION/

FRAME NO.

TIME
YR.HD.DY
HR.MI.SECS/C POSITION
ALT 5800.00 KM
ALT RT -0.1259 KM/SEC
LAT -34.03 DEG
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TILT ANG 118.92 DEG
TILT AZIM 307.96 DEG
SWING ANG 37.86 DEG
N.DEV. .PHOTO ILLUMINATION
SUN AZIM 269.11 DEG
INCID ANG 94.21 DEG
EMIS ANG 137.86 DEG
PHASE ANG 114.05 DEG
ALPHA -29.02 DEGPRINCIPAL POINT
LATITUDE -21.34 DEG
LONGITUDE 94.79 DEG

MISSION/

FRAME NO.

TIME
YR.HD.DY
HR.MI.SECS/C POSITION
ALT 5800.00 KM
ALT RT -0.1259 KM/SEC
LAT -34.03 DEG
LONG 110.74 DEGS/C ORIENTATION
TILT ANG 118.92 DEG
TILT AZIM 307.96 DEG
SWING ANG 37.86 DEG
N.DEV. .PHOTO ILLUMINATION
SUN AZIM 269.11 DEG
INCID ANG 94.21 DEG
EMIS ANG 137.86 DEG
PHASE ANG 114.05 DEG
ALPHA -29.02 DEGPRINCIPAL POINT
LATITUDE -21.34 DEG
LONGITUDE 94.79 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

4172
YR. MO. DY
HR. MI. SECTIME
670524
350C29.11
S/C POSITION
ALT 301G.73 KM
ALT RT -0.1969 KM/SEC
LAT -41.98 DEG
LONG -79.24 DEG
N.ODEV.S/C ORIENTATION
TILT ANG 4.76 DEG
TILT AZIM 100.34 DEG
SWING ANG 297.27 DEG
EMISS ANG 13.12 DEG
PHASE ANG 86.06 DEG
ALPHA -12.44 DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	-43.91 DEG	AB 344.0 KM
A LONG	-119.63 DEG	BC 225.6 KM
B LAT	-51.03 DEG	CD 952.2 KM
B LONG	-122.89 DEG	DA 273.8 KM
C LAT	-63.01 DEG	TILT DISTANCE 6.5
C LONG	161.22 DEG	
D LAT	3.01 DEG	C LONG -58.38 DEG 50.8
D LONG	-125.22 DEG	D LAT -27.39 DEG
		D LONG -80.69 DEG

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	-23.92 DEG	AB 149.5 KM
A LONG	-71.02 DEG	BC 299.1 KM
B LAT	-56.51 DEG	CD 123.9 KM
B LONG	-42.37 DEG	DA 284.0 KM
C LAT	-62.15 DEG	TILT DISTANCE
C LONG		
D LAT		
D LONG		

MISSION/

FRAME NO.

4173
YR. MO. DY
HR. MI. SECTIME
670524
053243.11
S/C POSITION
ALT 2724.03 KM
ALT RT -0.0916 KM/SEC
LAT -14.37 DEG
LONG -76.23 DEG
N.ODEV.S/C ORIENTATION
TILT ANG 0.56 DEG
TILT AZIM 116.66 DEG
SWING ANG 301.46 DEG
EMISS ANG 1.45 DEG
PHASE ANG 75.87 DEG
ALPHA -1.24 DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	17.73 DEG	AB 470.8 KM
A LONG	-32.04 DEG	BC 375.1 KM
B LAT	-29.95 DEG	CD 855.3 KM
B LONG	-16.00 DEG	DA 965.4 KM
C LAT	-44.17 DEG	TILT DISTANCE 0.7
C LONG	-147.15 DEG	
D LAT	20.32 DEG	
D LONG	-128.57 DEG	

HIGH RESOLUTION

CORNER	COORDINATE	SIDE LENGTH
A LAT	2.34 DEG	AB 006.4 KM
A LONG	-72.65 DEG	BC 253.2 KM
B LAT	-31.16 DEG	CD 004.3 KM
B LONG	-68.76 DEG	DA 251.8 KM
C LAT	-31.95 DEG	TILT DISTANCE 6.0
C LONG	-78.53 DEG	
D LAT	1.60 DEG	
D LONG	-80.94 DEG	

PRINCIPAL POINT

LATITUDE -42.94 DEG

LONGITUDE -67.94 DEG

PRINCIPAL POINT

LATITUDE 149.5 KM

LONGITUDE 299.1 KM

PRINCIPAL POINT

LATITUDE 123.9 KM

LONGITUDE 284.0 KM

PRINCIPAL POINT

LATITUDE 14.77 DEG

LONGITUDE 75.41 DEG

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MISSION/
FRAME NO.

4.174 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 570⁵²24 ALT 2675.04 KM TILT ANG 1.34 DEG SUN AZIM 53.02 DEG LATITUDE 13.37 DEG
 HR, MI, SEC 260317.71 ALT RT 0.3377 KM/SEC TILT AZIM 255.11 DEG INCID ANG 74.45 DEG LONGITUDE -76.00 DEG
 LAT 13.91 DEG SWING ANG 69.60 DEG EMISS ANG 3.40 DEG
 LONG -73.95 DEG N.DEV. 353.95 DEG PHASE ANG 71.27 DEG
 ALPHA 3.22 DEG

MISSION/
FRAME NO.

4.175 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670⁵²24 ALT 2671.66 KM TILT ANG 2.03 DEG SUN AZIM 106.76 DEG LATITUDE 41.29 DEG
 HR, MI, SEC 063541.21 ALT RT 0.1605 KM/SEC TILT AZIM 116.50 DEG INCID ANG 70.80 DEG LONGITUDE -56.78 DEG
 LAT 42.86 DEG SWING ANG 279.58 DEG EMISS ANG 5.40 DEG
 LONG -73.79 DEG N.DEV. 340.50 DEG PHASE ANG 76.07 DEG
 ALPHA -5.28 DEG

MISSION/
FRAME NO.

4.176 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670⁵²24 ALT 2671.66 KM TILT ANG 2.03 DEG SUN AZIM 106.76 DEG LATITUDE 41.29 DEG
 HR, MI, SEC 063541.21 ALT RT 0.1605 KM/SEC TILT AZIM 116.50 DEG INCID ANG 70.80 DEG LONGITUDE -56.78 DEG
 LAT 42.86 DEG SWING ANG 279.58 DEG EMISS ANG 5.40 DEG
 LONG -73.79 DEG N.DEV. 340.50 DEG PHASE ANG 76.07 DEG
 ALPHA -5.28 DEG

MEDIUM RESOLUTION HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH
 A LAT 37.23 DEG AB 927.5 KM A LAT 29.11 DEG AB 984.1 KM
 A LONG -7.51 DEG BC 531.9 KM A LONG -69.57 DEG BC 249.3 KM
 B LAT -32.01 DEG CD 485.4 KM B LAT -3.57 DEG CD 989.5 KM
 B LONG -25.18 DEG DA 204.5 KM B LONG -73.78 DEG DA 247.1 KM
 C LAT -14.28 DEG TILT DISTANCE C LAT -2.84 DEG TILT DISTANCE
 C LONG -132.04 DEG 1.8 C LONG -82.00 DEG 14.2
 D LAT 37.02 DEG D LAT 30.15 DEG
 D LONG -132.81 DEG D LONG -78.88 DEG

MEDIUM RESOLUTION HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH
 A LAT 20.28 DEG AB 977.1 KM A LAT 55.26 DEG AB 968.6 KM
 A LONG -3.47 DEG BC 564.3 KM A LONG -48.39 DEG BC 263.4 KM
 B LAT -6.68 DEG CD 939.0 KM B LAT 22.64 DEG CD 958.6 KM
 B LONG -23.13 DEG DA 186.9 KM B LONG -68.38 DEG DA 267.7 KM
 C LAT 2.64 DEG TILT DISTANCE C LAT 25.31 DEG TILT DISTANCE
 C LONG -128.23 DEG 2.8 C LONG -77.67 DEG 21.6
 D LAT 58.35 DEG D LAT 59.30 DEG
 D LONG 174.73 DEG D LONG -63.00 DEG

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MISSION/
FRAME NO.

4.176 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670524 ALT 3353.82 KM TILT ANG 1.46 DEG SUN AZIM 125.68 DEG LATITUDE 69.97 DEG
 HR, MI, SEC 071412.71 ALT RT 0.2444 KM/SEC TILT AZIM 142.72 DEG INCID ANG 77.25 DEG LONGITUDE -54.78 DEG
 LAT 72.28 DEG SWING ANG 319.57 DEG EMISS ANG 4.28 DEG
 LONG -59.77 DEG N.DEV. 352.20 DEG PHASE ANG 81.23 DEG
 ALPHA -3.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 42.31 DEG	AB 114.5 KM	A LAT 81.96 DEG	AB 254.5 KM	
A LONG -135.34 DEG	BC 277.2 KM	A LONG 34.14 DEG	AC 317.8 KM	
B LAT 37.16 DEG	CD 054.9 KM	B LAT 47.58 DEG	CD 248.1 KM	
B LONG -129.24 DEG	DA 756.5 KM	B LONG -51.01 DEG	DA 310.3 KM	
C LAT 21.96 DEG	TILT DISTANCE	C LAT 48.52 DEG	TILT DISTANCE	
C LONG -121.33 DEG	2.0	C LONG -66.59 DEG	15.5	
D LAT 28.69 DEG		D LAT 87.61 DEG		
D LONG -172.00 DEG		D LONG -171.32 DEG		

MISSION/
FRAME NO.

4.177 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670524 ALT 5491.85 KM TILT ANG 7.56 DEG SUN AZIM 258.73 DEG LATITUDE 38.81 DEG
 HR, MI, SEC 094528.41 ALT RT 0.1698 KM/SEC TILT AZIM 290.06 DEG INCID ANG 75.23 DEG LONGITUDE 67.85 DEG
 LAT 33.96 DEG SWING ANG 282.31 DEG EMISS ANG 33.23 DEG
 LONG 99.33 DEG N.DEV. 191.42 DEG PHASE ANG 107.72 DEG
 ALPHA -32.60 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 17.24 DEG	AB 130.5 KM	A LAT -4.73 DEG	AB 459.6 KM	
A LONG 146.49 DEG	BC 420.5 KM	A LONG 54.41 DEG	BC 868.9 KM	
B LAT 27.71 DEG	CD 512.3 KM	B LAT 55.37 DEG	CD 205.4 KM	
B LONG 156.43 DEG	DA 339.9 KM	B LONG 6.67 DEG	DA 784.4 KM	
C LAT 30.77 DEG	TILT DISTANCE	C LAT 78.14 DEG	TILT DISTANCE	
C LONG -172.23 DEG	10.6	C LONG 25.47 DEG	81.0	
D LAT -6.59 DEG		D LAT 4.17 DEG		
D LONG 141.59 DEG		D LONG 78.98 DEG		

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MISSION/
FRAME NO.

4178
 TIME 670⁵24 YR, MO, DY
 ALT RT -0.1263 KM/SEC
 LAT -32° 98' DEG
 LONG 104.14 DEG
 N.DEV.
 ...

S/C POSITION
 ALT 576.24 KM
 TILT ANG 5.26 DEG
 TILT AZIM 264.17 DEG
 SWING ANG 274.97 DEG
 N.DEV.
 ...

MISSION/
FRAME NO.

4179
 TIME 670⁵24 YR, MO, DY
 ALT RT -0.1258 KM/SEC
 LAT -71.38 DEG
 LONG -95.22 DEG
 N.DEV.
 ...

S/C POSITION
 ALT 3594.83 KM
 TILT ANG 3.64 DEG
 TILT AZIM 06.54 DEG
 SWING ANG 246.42 DEG
 N.DEV.
 ...

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT C° DEG AB 0° KH
 A LONG C° DEG BC 0° KH
 B LAT 0° DEG CD 0° KH
 B LONG 0° DEG DA 0° KH
 C LAT 0° DEG DEG TILT DISTANCE 7.3
 C LONG 0° DEG CLAT 7.3
 D LAT 0° DEG C LONG 86.97 DEG
 D LONG 0° DEG DLAT -72.86 DEG
 ...
 D LONG 94.71 DEG
 ...

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -67.04 DEG AB 452.3 KM
 A LONG 20.50 DEG BC 830.6 KM
 B LAT 18.22 DEG CD 241.9 KM
 B LONG 58.90 DEG DA 731.7 KM
 C LAT 7.38 DEG CLAT 56.1
 C LONG 86.97 DEG DLAT -72.86 DEG
 D LAT -94.71 DEG D LONG
 ...

MISSION/
FRAME NO.

4179
 TIME 161523.01 YR, MO, SEC
 ALT RT -0.1258 KM/SEC
 LAT -71.38 DEG
 LONG -95.22 DEG
 N.DEV.
 ...

S/C POSITION
 ALT 196.5 KM
 TILT ANG 3.64 DEG
 TILT AZIM 06.54 DEG
 SWING ANG 246.42 DEG
 N.DEV.
 ...

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -36.28 DEG AB 196.5 KM
 A LONG -14.73 DEG BC 280.2 KM
 B LAT -41.21 DEG CD 612.4 KM
 B LONG -150.87 DEG DA 439.5 KM
 C LAT -35.29 DEG TILT DISTANCE 5.0
 C LONG 173.75 DEG CLAT 5.0
 D LAT -24.53 DEG C LONG 176.4 DEG
 D LONG -131.03 DEG DLAT -45.77 DEG
 D LONG -81.21 DEG D LONG
 ...

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -44.69 DEG AB 370.4 KM
 A LONG -64.62 DEG BC 340.4 KM
 B LAT -83.09 DEG CD 342.8 KM
 B LONG 31.86 DEG DA 354.4 KM
 C LAT -85.11 DEG CLAT 38.8
 C LONG 176.4 DEG DLAT -45.77 DEG
 D LAT -81.21 DEG D LONG
 ...

PHOTO ILLUMINATION
 SUN AZIM 271.85 DEG
 INCID ANG 88.54 DEG
 EMISS ANG 23.42 DEG
 PHASE ANG 111.88 DEG
 ALPHA -23.34 DEG

PHOTO ILLUMINATION
 SUN AZIM 68.15 DEG
 INCID ANG 82.85 DEG
 EMISS ANG 11.24 DEG
 PHASE ANG 94.08 DEG
 ALPHA -11.23 DEG

PRINCIPAL POINT
 LATITUDE -33.87 DEG
 LONGITUDE 82.21 DEG

PHOTO ILLUMINATION
 SUN AZIM 68.15 DEG
 INCID ANG 82.85 DEG
 EMISS ANG 11.24 DEG
 PHASE ANG 94.08 DEG
 ALPHA -11.23 DEG

PRINCIPAL POINT
 LATITUDE -69.52 DEG
 LONGITUDE -74.57 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

4180	TIME YR, MO, DY HR, MI, SEC	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
		ALT	3009.00 KM	TILT ANG 4.60 DEG	SUN AZIM 74.57 DEG	INCID ANG 73.55 DEG	EMISS ANG 12.65 DEG	LATITUDE -40.83 DEG	LONGITUDE -75.22 DEG				
	1701E54.31	ALT RT -0.1963 KM/SEC	TILT AZIM 85.24 DEG	SWING ANG 2.82.69 DEG	N.DEV. 24.22 DEG	PHASE ANG 86.58 DEG							
		LAT -42.00 DEG				ALPHA -12.63 DEG							
		LONG -85.86 DEG											

MEDIUM RESOLUTION												
CORNER COORDINATE	SIDE LENGTH			PHOTO ILLUMINATION			PRINCIPAL POINT			HIGH RESOLUTION		
A LAT	-42.17 DEG	AB 329.6 KM	BC 222.1 KM	CD 138.7 KM	DA 953.5 KM	SUN AZIM 85.69 DEG	INCID ANG 75.16 DEG	EMISS ANG 2.39 DEG	LATITUDE -13.09 DEG	LONGITUDE -82.18 DEG	CORNER COORDINATE	
A LONG	-124.96 DEG								AB 140.5 KM	BC 295.2 KM	A LAT -21.41 DEG	
B LAT	-45.32 DEG								CD 114.8 KM	DA 288.2 KM	B LAT -78.15 DEG	
B LONG	-127.28 DEG										B LONG -54.26 DEG	
C LAT	-63.97 DEG										C LAT -51.95 DEG	
C LONG	151.58 DEG										C LONG -59.63 DEG	
D LAT	-6.43 DEG										D LAT -25.07 DEG	
D LONG	-130.46 DEG										D LONG -87.72 DEG	

MISSION/
FRAME NO.

4181	TIME YR, MO, DY HR, MI, SEC	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
		ALT	2723.92 KM	TILT ANG 0.93 DEG	SUN AZIM 85.69 DEG	INCID ANG 75.16 DEG	EMISS ANG 2.39 DEG	LATITUDE -13.09 DEG	LONGITUDE -82.18 DEG				
	1733 E.71	ALT RT -C.0900 KM/SEC	TILT AZIM 26.84 DEG	SWING ANG 212.07 DEG	N.DEV. 5.36 DEG	PHASE ANG 76.40 DEG							
		LAT -14.40 DEG				ALPHA -1.25 DEG							
		LONG -82.86 DEG											

MEDIUM RESOLUTION												
CORNER COORDINATE	SIDE LENGTH			PHOTO ILLUMINATION			PRINCIPAL POINT			HIGH RESOLUTION		
A LAT	23.80 DEG	AB 509.4 KM	BC 292.1 KM	CD 042.3 KM	DA 442.7 KM	SUN AZIM 85.69 DEG	INCID ANG 75.63 DEG	EMISS ANG 2.39 DEG	LATITUDE -13.09 DEG	LONGITUDE -82.18 DEG	CORNER COORDINATE	
A LONG	-33.17 DEG								AB 007.4 KM	BC 250.8 KM	A LAT 4.35 DEG	
B LAT	-27.52 DEG								CD 005.2 KM	DA 254.4 KM	B LAT -79.51 DEG	
B LONG	-28.35 DEG										B LONG -29.17 DEG	
C LAT	-44.82 DEG										C LAT -30.01 DEG	
C LONG	-151.67 DEG										C LONG -85.11 DEG	
D LAT	12.19 DEG										D LAT 3.54 DEG	
D LONG	-127.58 DEG										D LONG -67.89 DEG	

LUNAR CRATER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.
4183
YR, MO, DY
1975 E24
HR, MI, SEC 100:341.71

S/C POSITION
ALT RT 2674.33 KM
ALT RT 0.2384 KM/SEC
LAT 13.88 DEG
LONG -89.57 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 1.24 DEG
TILT AZIM 329.44 DEG
SWING ANG 143.45 DEG
PHASE ANG 354.26 DEG
ALPHA 1.47 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 25.22 DEG AB 784.4 KM
A LONG -12.65 DEG BC 977.1 KM
B LAT -21.18 DEG CD 957.3 KM
H LONG -22.82 DEG DA 350.9 KM
C LAT -17.44 DEG TILT DISTANCE 1.4
C LONG -126.71 DEG
D LAT 35.74 DEG
D LONG -141.43 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 31.28 DEG AB 984.2 KM
A LONG -74.76 DEG BC 245.1 KM
B LAT -1.37 DEG CD 989.2 KM
B LONG -79.05 DEG DA 249.7 KM
C LAT -7.53 DEG TILT DISTANCE 1.0
C LONG -87.15 DEG
D LAT 32.37 DEG
D LONG -84.40 DEG

MISSION/
FRAME NO.
4183
YR, MO, DY
1975 E24
HR, MI, SEC 1031 7.51

S/C POSITION
ALT RT 2874.45 KM
ALT RT 0.1611 KM/SEC
LAT 42.84 DEG
LONG -77.39 DEG
N.DEV.

S/C ORIENTATION
TILT ANG 2.82 DEG
TILT AZIM 79.44 DEG
SWING ANG 242.58 DEG
PHASE ANG 338.73 DEG
ALPHA -6.86 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 15.52 DEG AB 322.5 KM
A LONG -15.51 DEG BC 588.6 KM
B LAT -4.76 DEG CD 575.3 KM
B LONG -25.77 DEG DA 229.4 KM
C LAT 5.15 DEG TILT DISTANCE 3.9
C LONG -127.54 DEG
D LAT 58.86 DEG
D LONG 165.52 DEG

CORNER COORDINATE SIDE LENGTH
A LAT 57.35 DEG AB 975.7 KM
A LONG -49.76 DEG BC 266.8 KM
B LAT 25.35 DEG CD 662.8 KM
B LONG -73.11 DEG DA 273.8 KM
C LAT 28.13 DEG TILT DISTANCE 30.1
C LONG -82.48 DEG
D LAT 61.91 DEG
D LONG -65.28 DEG

S/C POSITION
ALT RT 198.91 DEG
ALT RT 70.16 DEG
LAT 198.91 DEG
LONG 70.16 DEG
N.DEV.

S/C ORIENTATION
INCID ANG 70.16 DEG
EMISS ANG 7.52 DEG
PHASE ANG 77.00 DEG
ALPHA -6.86 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 31.37 DEG AB 984.2 KM
A LONG -74.76 DEG BC 245.1 KM
B LAT -1.37 DEG CD 989.2 KM
B LONG -79.05 DEG DA 249.7 KM
C LAT -7.53 DEG TILT DISTANCE 1.0
C LONG -87.15 DEG
D LAT 32.37 DEG
D LONG -84.40 DEG

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MISSION/
FRAME NO.

4184 YR, MO, DY 67C525
HR, MI, SEC 01303E.01

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	579C.16 KM	TILT ANG 6.57 DEG	SUN AZIM 275.83 DEG	LATITUDE -35.18 DEG	
ALT RT	-0.1273 KM/SEC	TILT AZIM 259.11 DEG	INCID ANG 83.06 DEG	LONGITUDE 69.32 DEG	
LAT	-34.03 DEG	SWING ANG 269.51 DEG	EMISS ANG 29.73 DEG		
LONG	97.52 DEG	N.DEV.	PHASE ANG 112.78 DEG		
		174.87 DEG	ALPHA -29.72 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -16.18 DEG	AB 771.8 KM	CORNER COORDINATE SIDE LENGTH
A LONG 159.64 DEG	BC 449.6 KM	A LAT -54.64 DEG AB 474.6 KM
B LAT -3.58 DEG	CD 531.9 KM	A LONG -18.67 DEG BC 118.2 KM
A LONG 159.57 DEG	DA 791.5 KM	B LAT 19.76 DEG CD 255.4 KM
C LAT -2.55 DEG	TILT DISTANCE	B LONG 42.16 DEG DA 405.0 KM
C LONG 159.65 DEG	9.2	C LAT 4.85 DEG TILT DISTANCE
D LAT -16.58 DEG		C LONG 76.07 DEG
D LONG 160.95 DEG		D LAT -75.91 DEG 79.3
		D LONG 55.11 DEG

MISSION/
FRAME NO.

4185 YR, MO, DY 67C525
HR, MI, SEC 01303E.01

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	5789.66 KM	TILT ANG 6.57 DEG	SUN AZIM 275.86 DEG	LATITUDE -35.27 DEG	
ALT RT	-0.1274 KM/SEC	TILT AZIM 258.93 DEG	INCID ANG 83.05 DEG	LONGITUDE 69.30 DEG	
LAT	-34.05 DEG	SWING ANG 269.23 DEG	EMISS ANG 29.73 DEG		
LONG	97.52 DEG	N.DEV.	PHASE ANG 112.78 DEG		
		174.81 DEG	ALPHA -29.73 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -16.25 DEG	AB 771.8 KM	CORNER COORDINATE SIDE LENGTH
A LONG 159.70 DEG	BC 449.5 KM	A LAT -57.29 DEG AB 365.0 KM
B LAT -4.09 DEG	CD 531.7 KM	A LONG -11.65 DEG BC 077.9 KM
B LONG 150.58 DEG	DA 791.5 KM	B LAT 18.54 DEG CD 255.3 KM
C LAT -2.67 DEG	TILT DISTANCE	B LONG 43.34 DEG DA 407.6 KM
C LONG 150.65 DEG	9.2	C LAT 4.70 DEG TILT DISTANCE
D LAT -17.34 DEG		C LONG 76.09 DEG
D LONG 161.02 DEG		D LAT -76.04 DEG
		D LONG 54.81 DEG

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MISSION/
FRAME NO.

4186 TIME 57C525 S/C POSITION TILT ANG PRINCIPAL POINT
 YR, MO, DY 05/122.91 ALT RT 30n5.60 KM SUN AZIM 74.18 DEG LATITUDE -42.27 DEG
 HR, MI, SEC 053122.91 LAT -41.96 DEG TILT AZIM 95.87 DEG INCID ANG 74.36 DEG LONGITUDE -31.34 DEG
 LONG -92.48 DEG SWING ANG 292.95 DEG EMISS ANG 12.99 DEG
 N.DEV. 24.53 DEG PHASE ANG 86.97 DEG
 ALPHA -12.63 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -43.41 DEG AB 331.4 KM
 A LONG -132.27 DEG BC 223.8 KM
 B LAT -50.53 DEG CD 999.5 KM
 B LONG -135.19 DEG DA 273.8 KM
 C LAT -63.76 DEG TILT DISTANCE 6.5
 C LONG 147.73 DEG
 D LAT 3.28 DEG
 D LONG -142.45 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -23.17 DEG AB 144.5 KM
 A LONG -84.28 DEG BC 297.6 KM
 B LAT -55.77 DEG CD 113.8 KM
 B LONG -55.56 DEG DA 284.9 KM
 C LAT -61.32 DEG TILT DISTANCE 50.4
 C LONG -72.21 DEG
 D LAT -25.70 DEG
 D LONG -94.02 DEG

MISSION/
FRAME NO.

4187 TIME 57C525 S/C POSITION TILT ANG PRINCIPAL POINT
 YR, MO, DY 053333.51 ALT RT 2722.78 KM SUN AZIM 85.40 DEG LATITUDE -14.97 DEG
 HR, MI, SEC 053333.51 LAT -14.36 DEG TILT AZIM 145.83 DEG INCID ANG 76.16 DEG LONGITUDE -89.05 DEG
 LONG -86.48 DEG SWING ANG 330.41 DEG EMISS ANG 1.20 DEG
 N.DEV. 4.70 DEG PHASE ANG 76.66 DEG
 ALPHA -0.60 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 16.36 DEG AB 447.7 KM
 A LONG -47.24 DEG BC 368.2 KM
 B LAT -31.50 DEG CD 411.4 KM
 B LONG -31.19 DEG DA 595.9 KM
 C LAT -27.86 DEG TILT DISTANCE C.6
 C LONG -142.22 DEG
 D LAT 20.38 DEG
 D LONG -143.50 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.07 DEG AB 005.5 KM
 A LONG -86.24 DEG BC 253.2 KM
 B LAT -31.41 DEG CD 024.4 KM
 B LONG -82.53 DEG DA 251.4 KM
 C LAT -32.17 DEG TILT DISTANCE C.9
 C LONG -92.23 DEG
 D LAT 1.40 DEG
 D LONG -94.52 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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PAGE 39A

MISSION/
FRAME NO.4188
YR.MD.DY
HR.MI.SECTIME
670525
0604 8.61S/C POSITION
ALT 2675.39 KM
ALT RT 0.0396 KM/SEC
LA1 13° 92 DEG
LONG -87.19 DEG
NDEV. 354.12 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 37° 53 DEG	AB 957.6 KM
A LONG -15° 58 DEG	BC 951.9 KM
B LAT -32° 24 DEG	CD 485.2 KM
B LONG -41° 75 DEG	DA 303.8 KM
C LAT -14° 42 DEG	TILT DISTANCE 1.8
C LONG -145° 20 DEG	
D LAT 36° 52 DEG	
D LONG -146.18 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 29.16 DEG	AB 985.1 KM
A LONG -82.83 DEG	BC 249.5 KM
B LAT -3.56 DEG	CD 990.4 KM
B LONG -86.95 DEG	DA 247.3 KM
C LAT -2.85 DEG	TILT DISTANCE 14.1
C LONG -95.17 DEG	
D LAT 30.17 DEG	
D LONG -92.16 DEG	

MISSION/
FRAME NO.4189
YR.MD.DY
HR.MI.SECTIME
670525
063433.91S/C POSITION
ALT 2877.75 KM
ALT RT 0.1620 KM/SEC
LAT 42° 88 DEG
LONG -84.00 DEG
NDEV. 340.43 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 20° 47 DEG	AB 954.0 KM
A LONG -16° 06 DEG	BC 504.4 KM
B LAT -2° 23 DEG	CD 998.8 KM
B LONG -38° 26 DEG	DA 127.4 KM
C LAT 1° 65 DEG	TILT DISTANCE 2.5
C LONG -139° 51 DEG	
D LAT 55° 29 DEG	
D LONG 165° 43 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 55.73 DEG	AB 970.4 KM
A LONG -61.35 DEG	BC 269.2 KM
B LAT 23.12 DEG	CD 660.7 KM
B LONG -81.62 DEG	DA 268.7 KM
C LAT 25.76 DEG	TILT DISTANCE 20.4
C LONG -90.95 DEG	
D LAT 59.82 DEG	
D LONG -75.08 DEG	

CORNER COORDINATE	SIDE LENGTH
A LAT 13° 38 DEG	LATITUDE 13° 38 DEG
A LONG -89.22 DEG	LONGITUDE -89.22 DEG
B LAT 75.49 DEG	
B LONG 3.37 DEG	
C LAT 92.74 DEG	
C LONG 72.29 DEG	
D LAT 3.19 DEG	

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MISSION/

FRAME NO.

419C
YR. MO. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	671525	ALT 1 3373.20 KM	TILT ANG 1.90 DEG	SUN AZIM 129.20 DEG	LATITUDE 70.34 DEG
	0947 5.51	ALT RT 0.2457 KM/SEC	TILT AZIM 125.51 DEG	INCID ANG 76.50 DEG	LONGITUDE -53.47 DEG
		LAT 72.71 DEG	SWING ANG 305.23 DEG	EMISS ANG 5.50 DEG	
		LONG -72.45 DEG	N.DEV. 352.33 DEG	PHASE ANG 82.08 DEG	
				ALPHA -5.58 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION
A LAT 43.43 DEG	AB 060.3 KM		CORNER COORDINATE SIDE LENGTH
A LONG -147.50 DEG	BC 272.9 KM		A LAT 81.80 DEG AB 265.3 KM
B LAT 38.76 DEG	CD 018.5 KM		A LONG 29.15 DEG BC 321.0 KM
D LONG -137.25 DEG	DA 707.3 KM		B LAT 47.69 DEG CD 254.7 KM
C LAT 25.59 DEG	TILT DISTANCE		B LONG -59.38 DEG DA 313.1 KM
C LONG -128.38 DEG	2.6		C LAT 49.76 DEG TILT DISTANCE
D LAT 30.47 DEG			C LONG -75.25 DEG 20.2
D LONG 176.55 DEG			D LAT 87.41 DEG
			D LONG 173.19 DEG

MISSION/

FRAME NO.

419C
YR. MO. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	671525	ALT 5503.39 KM	TILT ANG 7.70 DEG	SUN AZIM 257.65 DEG	LATITUDE 38.30 DEG
	0947 5.51	ALT RT 0.1682 KM/SEC	TILT AZIM 288.89 DEG	INCID ANG 73.68 DEG	LONGITUDE 53.79 DEG
		LAT 33.95 DEG	SWING ANG 281.87 DEG	EMISS ANG 32.98 DEG	
		LONG 86.05 DEG	N.DEV. 192.25 DEG	PHASE ANG 106.97 DEG	
				ALPHA -33.40 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION
A LAT 17.59 DEG	AB 121.4 KM		CORNER COORDINATE SIDE LENGTH
A LONG 132.69 DEG	BC 418.3 KM		A LAT -5.28 DEG AB 523.0 KM
B LAT 28.61 DEG	CD 554.1 KM		A LONG 40.10 DEG BC 937.8 KM
B LONG 142.41 DEG	DA 326.8 KM		B LAT 53.43 DEG CD 214.0 KM
C LAT 32.12 DEG	TILT DISTANCE		B LONG -9.33 DEG DA 815.9 KM
C LONG 175.60 DEG	1.0.3		C LAT 77.07 DEG TILT DISTANCE
D LAT -0.18 DEG			C LONG 9.39 DEG 82.6
D LONG 128.27 DEG			D LAT 3.66 DEG
			D LONG 65.44 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.4192
YR, MO, DY
HR, MI, SEC

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT

670525 ALT 5503.98 KM TILT ANG 7.59 DEG SUN AZIM 257.70 DEG LATITUDE 35.22 NEG

0547 9.51 ALT RT 0.1681 KM/SEC TILT AZIM 238.76 DEG INCID ANG 73.70 DEG LONGITUDE 53.83 DEG

LAT 33.93 DEG SWING ANG 281.73 DEG EMISS ANG 33.94 DEG

LONG 86.05 DEG N.DEV. 192.19 DFG PHASE ANG 136.97 DEG

 ALPHA -33.38 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 17.90 DEG AB 123.3 KM

A LONG 132.69 DEG BC 418.8 KM

B LAT 26.53 DEG CD 621.7 KM

B LONG 142.38 DEG DA 330.7 KM

C LAT 30.72 DEG TILT DISTANCE

C LONG 178.70 DEG 10.7

D LAT -0.32 DEG

D LONG 128.32 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -6.44 DEG AB 527.4 KM

A LONG 47.36 DEG BC 931.3 KM

B LAT 53.54 DEG CD 232.3 KM

B LONG -8.76 DEG DA 817.7 KM

C LAT 77.04 DEG TILT DISTANCE

C LONG 19.24 DEG 82.5

D LAT 3.55 DEG

D LONG 65.44 DEG

MISSION/
FRAME NO.4193
YR, MO, DY
HR, MI, SEC

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT

670525 ALT 3519.21 KM TILT ANG 4.80 DEG SUN AZIM 58.50 DEG LATITUDE -63.89 DEG

162427.51 ALT RT -0.2554 KM/SEC TILT AZIM 70.10 DEG INCID ANG 80.69 DEG LONGITUDE -85.97 DEG

LAT -68.87 DEG SWING ANG 231.91 DEG EMISS ANG 14.66 DEG

LONG -107.44 DEG N.DEV. 0.61 DFG PHASE ANG 94.63 DEG

 ALPHA -13.97 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -35.64 DEG AB 091.1 KM

A LONG -147.49 DEG BC 278.9 KM

B LAT -41.24 DEG CD 875.5 KM

B LONG -156.17 DEG DA 387.8 KM

C LAT -28.32 DEG TILT DISTANCE

C LONG 150.46 DEG 6.7

D LAT -21.32 DEG

D LONG -139.56 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -37.95 DEG AB 374.8 KM

A LONG -77.24 DEG BC 320.7 KM

B LAT -81.89 DEG CD 339.6 KM

B LONG -31.48 DEG DA 360.4 KM

C LAT -83.58 DEG TILT DISTANCE

C LONG -128.50 DEG 51.2

D LAT -39.54 DEG

D LONG -92.40 DEG

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MISSION/

FRAME NO.

4194

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 3002.79 KM	TILT ANG 5.31 DEG	SUN AZIM 73.29 DEG	LATITUDE -42.97 DEG
670525	ALT RT -0.1949 KM/SEC	TILT AZIM 100.18 DEG	INCID ANG 73.91 DEG	LONGITUDE -86.50 DEG
170147.31	LAT -42.01 DEG	SWING ANG 297.39 DEG	EMISS ANG 14.63 DEG	
	LONG -99.09 DEG	N.DEV. -	PHASE ANG 87.83 DEG	
			ALPHA -13.97 DEG	

MISSION/

4195

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 2721.39 KM	TILT ANG 0.98 DEG	SUN AZIM 85.25 DEG	LATITUDE -14.91 DEG
670525	ALT RT -0.0890 KM/SEC	TILT AZIM 109.40 DEG	INCID ANG 75.53 DEG	LONGITUDE -94.60 DEG
1733356.31	LAT -14.40 DEG	SWING ANG 294.21 DEG	EMISS ANG 2.52 DEG	
	LONG -96.11 DEG	N.DEV. 5.21 DEG	PHASE ANG 77.84 DEG	
			ALPHA -2.31 DEG	

MISSION/

4195

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 2721.39 KM	TILT ANG 0.98 DEG	SUN AZIM 85.25 DEG	LATITUDE -14.91 DEG
670525	ALT RT -0.0890 KM/SEC	TILT AZIM 109.40 DEG	INCID ANG 75.53 DEG	LONGITUDE -94.60 DEG
1733356.31	LAT -14.40 DEG	SWING ANG 294.21 DEG	EMISS ANG 2.52 DEG	
	LONG -96.11 DEG	N.DEV. 5.21 DEG	PHASE ANG 77.84 DEG	
			ALPHA -2.31 DEG	

MISSION/

4195

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 2721.39 KM	TILT ANG 0.98 DEG	SUN AZIM 85.25 DEG	LATITUDE -14.91 DEG
670525	ALT RT -0.0890 KM/SEC	TILT AZIM 109.40 DEG	INCID ANG 75.53 DEG	LONGITUDE -94.60 DEG
1733356.31	LAT -14.40 DEG	SWING ANG 294.21 DEG	EMISS ANG 2.52 DEG	
	LONG -96.11 DEG	N.DEV. 5.21 DEG	PHASE ANG 77.84 DEG	
			ALPHA -2.31 DEG	

MISSION/

4195

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 2721.39 KM	TILT ANG 0.98 DEG	SUN AZIM 85.25 DEG	LATITUDE -14.91 DEG
670525	ALT RT -0.0890 KM/SEC	TILT AZIM 109.40 DEG	INCID ANG 75.53 DEG	LONGITUDE -94.60 DEG
1733356.31	LAT -14.40 DEG	SWING ANG 294.21 DEG	EMISS ANG 2.52 DEG	
	LONG -96.11 DEG	N.DEV. 5.21 DEG	PHASE ANG 77.84 DEG	
			ALPHA -2.31 DEG	

MISSION/

4195

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 2721.39 KM	TILT ANG 0.98 DEG	SUN AZIM 85.25 DEG	LATITUDE -14.91 DEG
670525	ALT RT -0.0890 KM/SEC	TILT AZIM 109.40 DEG	INCID ANG 75.53 DEG	LONGITUDE -94.60 DEG
1733356.31	LAT -14.40 DEG	SWING ANG 294.21 DEG	EMISS ANG 2.52 DEG	
	LONG -96.11 DEG	N.DEV. 5.21 DEG	PHASE ANG 77.84 DEG	
			ALPHA -2.31 DEG	

MISSION/

4195

YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 2721.39 KM	TILT ANG 0.98 DEG	SUN AZIM 85.25 DEG	LATITUDE -14.91 DEG
670525	ALT RT -0.0890 KM/SEC	TILT AZIM 109.40 DEG	INCID ANG 75.53 DEG	LONGITUDE -94.60 DEG
1733356.31	LAT -14.40 DEG	SWING ANG 294.21 DEG	EMISS ANG 2.52 DEG	
	LONG -96.11 DEG	N.DEV. 5.21 DEG	PHASE ANG 77.84 DEG	
			ALPHA -2.31 DEG	

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MISSION/
FRAME NO.
4196

TIME
YR, MO, DY

HR, MI, SEC

S/C POSITION
ALT RT 2675.44 KM
ALT RT 0.0404 KM/SEC
.LAT 13.88 DEG
LONG -93.82 DEG

S/C ORIENTATION
TILT ANG 0.93 DEG
TILT AZIM 224.92 DEG
SWING ANG 38.29 DEG
N.DEV. 353.59 DEG

MEDIUM RESOLUTION

SIDE LENGTH

CORNER COORDINATE
A LAT 25.03 DEG AB 981.2 KM
A LONG -25.60 DEG BC 921.2 KM
B LAT -25.86 DEG CD 447.2 KM
B LONG -47.64 DEG DA 442.2 KM
C LAT -13.01 DEG TILT DISTANCE 1.3
C LONG -145.28 DEG
D LAT 42.52 DEG
D LONG -163.48 DEG

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION
ALT RT 2879.33 KM
ALT RT 0.1626 KM/SEC
.LAT 42.84 DEG
LONG -90.66 DEG

S/C ORIENTATION
TILT ANG 2.52 DEG
TILT AZIM 115.41 DEG
SWING ANG 278.00 DEG
N.DEV. 339.41 DEG

HIGH RESOLUTION

CORNER COORDINATE
A LAT 29.53 DEG AB 986.4 KM
A LONG -88.28 DEG BC 229.6 KM
B LAT -4.21 DEG CD 989.0 KM
B LONG -92.67 DEG DA 245.3 KM
C LAT -3.37 DEG TILT DISTANCE 9.9
C LONG -100.89 DEG
D LAT 29.57 DEG
D LONG -97.52 DEG

PHOTO ILLUMINATION
SUN AZIM 92.70 DEG
INCID ANG 75.02 DEG
EMISS ANG 2.37 DEG
PHASE ANG 73.44 DEG
ALPHA 1.57 DEG

PRINCIPAL POINT
LATITUDE 12.86 DEG
LONGITUDE -94.86 DEG

MISSION/
FRAME NO.
4197

TIME
YR, MO, DY

HR, MI, SEC

TIME

YR, MO, DY

HR, MI, SEC

S/C POSITION
ALT RT 309.1 KM
ALT RT 0.033.8 KM
.LAT 003.3 KM
LONG -199.3 KM

S/C ORIENTATION
TILT ANG 2.52 DEG
TILT AZIM 115.41 DEG
SWING ANG 278.00 DEG
N.DEV. 339.41 DEG

MEDIUM RESOLUTION

SIDE LENGTH

CORNER COORDINATE
A LAT 14.53 DEG AB 309.1 KM
A LONG -33.23 DEG BC 433.8 KM
B LAT 6.75 DEG CD 003.3 KM
B LONG -40.46 DEG DA 199.3 KM
C LAT 2.00 DEG TILT DISTANCE 3.5
C LONG -144.08 DEG
D LAT 59.78 DEG
D LONG 151.82 DEG

PHOTO ILLUMINATION
SUN AZIM 106.17 DEG
INCID ANG 71.09 DEG
EMISS ANG 6.70 DEG
PHASE ANG 77.63 DEG
ALPHA -6.55 DEG

PRINCIPAL POINT
LATITUDE 40.93 DEG
LONGITUDE -85.66 DEG

HIGH RESOLUTION

CORNER COORDINATE
A LAT 54.66 DEG AB 074.0 KM
A LONG -66.78 DEG BC 271.3 KM
B LAT 22.17 DEG CD 061.4 KM
B LONG -87.56 DEG DA 269.5 KM
C LAT 25.06 DEG TILT DISTANCE 26.6
C LONG -96.83 DEG
D LAT 58.90 DEG
D LONG -81.12 DEG

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MISSION/
FRAME NO.419B
YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 5781.45 KM	TILT ANG 6.76 DEG	SUN AZIM 275.29 DEG	LATITUDE -29.05 DEG
670526	ALT RT -0.1289 KM/SEC	TILT AZIM 274.46 DEG	INCID ANG 82.13 DEG	LONGITUDE 55.71 DEG
013214.81	LAT -34.03 DEG	SWING ANG 284.75 DEG	EMISS ANG 30.64 DEG	
	LONG 84.20 DEG	N.DEV.	PHASE ANG 111.87 DEG	
			ALPHA -29.81 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -11.47 DEG	AB 717.7 KM
A LONG 141.36 DEG	BC 493.7 KM
B LAT 4.46 DEG	CD 590.5 KM
B LONG 137.64 DEG	DA 231.3 KM
C LAT 5.63 DEG	TILT DISTANCE 9.4
C LONG 138.10 DEG	
D LAT -18.36 DEG	
D LONG 166.83 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -59.97 DEG	AB 696.9 KM
A LONG 5.03 DEG	BC 895.2 KM
B LAT 11.31 DEG	CD 342.2 KM
B LONG 35.78 DEG	DA 759.5 KM
C LAT 18.00 DEG	TILT DISTANCE 72.3
C LONG 59.27 DEG	
D LAT -65.81 DEG	
D LONG 62.50 DEG	

MISSION/
FRAME NO.4199
YR, MO, DY
HR, MI, SEC

	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TIME	ALT 1 5780.97 KM	TILT ANG 6.75 DEG	SUN AZIM 275.31 DEG	LATITUDE -29.14 DEG
670526	ALT RT -0.1290 KM/SEC	TILT AZIM 274.29 DEG	INCID ANG 82.13 DEG	LONGITUDE 56.70 DEG
013218.51	LAT -34.05 DEG	SWING ANG 284.59 DEG	EMISS ANG 30.62 DEG	
	LONG 84.20 DEG	N.DEV.	PHASE ANG 111.87 DEG	
			ALPHA -29.81 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -11.55 DEG	AB 716.8 KM
A LONG 141.40 DEG	BC 492.3 KM
B LAT 4.31 DEG	CD 588.5 KM
B LONG 137.60 DEG	DA 247.1 KM
C LAT 6.47 DEG	TILT DISTANCE 9.4
C LONG 138.03 DEG	
D LAT -18.14 DEG	
D LONG 167.36 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -60.00 DEG	AB 700.4 KM
A LONG 4.70 DEG	BC 890.9 KM
B LAT 11.07 DEG	CD 339.5 KM
B LONG 35.92 DEG	DA 771.1 KM
C LAT 17.77 DEG	TILT DISTANCE 72.3
C LONG 59.34 DEG	
D LAT -66.91 DEG	
D LONG 62.42 DEG	

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MISSION/
FRAME NO.

4200 YR-MO-DY 670526 ALT 2718.95 KM
 HR-MI-SEC 053428.51 ALT RT ~0.0882 KM/SEC
 LAT -14.39 DEG SWING ANG 302.70 DEG
 LONG -102.71 DEG N-DEV. 4.86 DEG
 PHASE ANG 78.02 DEG
 ALPHA -1.51 DEG

S/C POSITION

S/C ORIENTATION

SUN AZIM 85.52 DEG
 INCID ANG 76.51 DEG
 EMISS ANG 1.78 DEG
 PHASE ANG 78.02 DEG
 ALPHA -1.51 DEG

MISSION/
FRAME NO.

4201 YR-MO-DY 670526 ALT 2674.74 KM
 HR-MI-SEC 0605 2.31 ALT RT 0.0414 KM/SEC
 LAT 13.90 DEG SWING ANG 263.32 DEG
 LONG -100.46 DEG N-DEV. 354.04 DEG
 PHASE ANG 1.20 DEG
 ALPHA 3.01 DEG

S/C POSITION

S/C ORIENTATION

SUN AZIM 76.93 DEG
 INCID ANG 3.06 DEG
 EMISS ANG 73.40 DEG
 PHASE ANG 3.01 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 17.48 DEG AB 480.4 KM
 A LONG -58.14 DEG BC 385.4 KM
 B LAT -30.19 DEG CD 81.9 KM
 B LONG -40.92 DEG DA 982.6 KM
 C LAT -44.01 DEG TILT DISTANCE 0.9
 C LONG -168.95 DEG
 D LAT -21.34 DEG
 D LONG -155.72 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.15 DEG AB 004.9 KM
 A LONG -98.91 DEG BC 252.9 KM
 B LAT -31.30 DEG CD 002.3 KM
 B LONG -95.10 DEG DA 251.2 KM
 C LAT -32.06 DEG TILT DISTANCE 7.4
 C LONG -104.68 DEG
 D LAT 1.43 DEG
 D LONG -107.18 DEG

MISSION/
FRAME NO.

4201 YR-MO-DY 670526 ALT 2674.74 KM
 HR-MI-SEC 0605 2.31 ALT RT 0.0414 KM/SEC
 LAT 13.90 DEG SWING ANG 263.32 DEG
 LONG -100.46 DEG N-DEV. 354.04 DEG
 PHASE ANG 1.20 DEG
 ALPHA 3.01 DEG

S/C POSITION

S/C ORIENTATION

SUN AZIM 92.95 DEG
 INCID ANG 76.41 DEG
 EMISS ANG 3.06 DEG
 PHASE ANG 73.40 DEG
 ALPHA 3.01 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 29.49 DEG AB 964.5 KM
 A LONG -95.90 DEG BC 248.9 KM
 B LAT -3.21 DEG CD 989.6 KM
 B LONG -100.10 DEG DA 247.7 KM
 C LAT -2.48 DEG TILT DISTANCE 1.6
 C LONG -108.30 DEG
 D LAT 30.52 DEG
 D LONG -105.27 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 2.15 DEG AB 004.9 KM
 A LONG -95.90 DEG BC 252.9 KM
 B LAT -31.30 DEG CD 002.3 KM
 B LONG -95.10 DEG DA 251.2 KM
 C LAT -32.06 DEG TILT DISTANCE 7.4
 C LONG -104.68 DEG
 D LAT 1.43 DEG
 D LONG -107.18 DEG

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MISSION/

FRAME NO.

4202
YR. MO. DY
HR. MI. SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 5515.29 KM	TILT ANG 7.26 DEG	SUN AZIM 259.28 DEG	LATITUDE 35.53 DEG
ALT RT 0.1671 KM/SEC	TIKT AZIM 282.22 DEG	INCID ANG 74.11 DEG	LONGITUDE 42.98 DEG
LAT 33.97 DEG	SWING ANG 275.47 DEG	EMISS ANG 31.24 DEG	
LONG 72.86 DEG	N.DEV. 189.83 DEG	PHASE ANG 105.81 DEG	
		ALPHA -31.72 DEG	

MISSION/

FRAME NO.

4203
YR. MO. DY
HR. MI. SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 5515.91 KM	TILT ANG 7.25 DEG	SUN AZIM 259.33 DEG	LATITUDE 35.45 DEG
ALT RT 0.1670 KM/SEC	TIKT AZIM 282.07 DEG	INCID ANG 74.13 DEG	LONGITUDE 42.92 DEG
LAT 33.95 DEG	SWING ANG 275.31 DEG	EMISS ANG 31.82 DEG	
LONG 72.86 DEG	N.DEV. 189.77 DEG	PHASE ANG 105.81 DEG	
		ALPHA -31.70 DEG	

MISSION/

FRAME NO.

4203
YR. MO. DY
HR. MI. SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 5515.91 KM	TILT ANG 7.25 DEG	SUN AZIM 259.33 DEG	LATITUDE 35.45 DEG
ALT RT 0.1670 KM/SEC	TIKT AZIM 282.07 DEG	INCID ANG 74.13 DEG	LONGITUDE 42.92 DEG
LAT 33.95 DEG	SWING ANG 275.31 DEG	EMISS ANG 31.82 DEG	
LONG 72.86 DEG	N.DEV. 189.77 DEG	PHASE ANG 105.81 DEG	
		ALPHA -31.70 DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

5005 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 YR. MO. DY 670806 ALT RT 2648.57 KM TILT ANG 9.70 DEG SUN AZIM 259.55 DEG LATITUDE 59.69 DEG
 HR. MI. SEC 1122 2.60 ALT RT 0.66601 KM/SEC TILT AZIM 285.81 DEG INCID ANG 82.23 DEG LONGITUDE -111.74 DEG
 LAT 58.97 DEG SWING ANG 90.22 DEG EMISS ANG 25.18 DEG
 LONG -81.16 DEG N.DEV. 9.88 DEG PHASE ANG 107.41 DEG
 ALPHA -25.18 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 52.30 DEG	AB 684.1 KM	A LAT 76.76 DEG	A LAT 76.76 DEG	AB 998.1 KM
A LONG 35.29 DEG	BC 671.8 KM	A LONG -110.82 DEG	BC 292.3 KM	
B LAT 4.22 DEG	CD 0. KM	B LAT 43.52 DEG	CD 047.6 KM	
B LONG -75.07 DEG	DA 708.4 KM	B LONG -102.83 DEG	DA 292.6 KM	
C LAT 0. DEG	TILT DISTANCE 13.6	C LAT 41.15 DEG	C LONG -115.51 DEG	
C LONG 0. DEG	DEG	C LONG -73.13 DEG	D LAT 73.13 DEG	
D LAT 66.78 DEG		D LONG -146.08 DEG	D LONG -145.82 DEG	
D LONG 89.13 DEG				

MISSION/
FRAME NO.

5006 TIME S/C POSITION S/C ORIENTATION PRINCIPAL POINT
 YR. MO. DY 670806 ALT RT 2648.37 KM TILT ANG 9.69 DEG SUN AZIM 259.62 DEG LATITUDE 59.63 DEG
 HR. MI. SEC 1122 5.32 ALT RT 0.6599 KM/SEC TILT AZIM 285.65 DEG INCID ANG 82.26 DEG LONGITUDE -111.66 DEG
 LAT 58.94 DEG SWING ANG 90.05 DEG EMISS ANG 25.15 DEG
 LONG -81.15 DEG N.DEV. 9.79 DEG PHASE ANG 107.41 DEG
 ALPHA -25.15 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 52.12 DEG	AB 687.4 KM	A LAT 76.70 DEG	A LAT 76.70 DEG	AB 998.8 KM
A LONG 39.05 DEG	BC 688.3 KM	A LONG -110.61 DEG	BC 292.5 KM	
B LAT 3.76 DEG	CD 0. KM	B LAT 43.43 DEG	CD 048.2 KM	
B LONG -75.03 DEG	DA 710.2 KM	B LONG -102.80 DEG	DA 292.6 KM	
C LAT 0. DEG	TILT DISTANCE 13.6	C LAT 41.07 DEG	C LONG -115.47 DEG	
C LONG 0. DEG	DEG	C LONG -73.10 DEG	D LAT 73.10 DEG	
D LAT 66.99 DEG		D LONG -145.82 DEG	D LONG -145.82 DEG	
D LONG 89.02 DEG				

LUNAR CRBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR.	MO.	DAY	HR.	MI.	SEC	ALT	KM	TILT ANG	SUN AZIM	259.70 DEG	LATITUDE	59.56 DEG		
5007	1122	0.02	070006	0	02	ALT RT	2650.15	KM	9.67	CEG	SUN AZIM	259.70 DEG	LATITUDE	59.56 DEG
HP.MI.SEC														
A LAT	52.24	DEG	AB	691.1	KM	ALT RT	0.6597	KM/SEC	285.50	CEG	INCID ANG	82.29 DEG	LATITUDE	-111.58 DEG
B LAT	38.82	DEG	BC	701.2	KM	LAT	58.91	DEG	89.88	CEG	EMISS ANG	25.13 DEG	LATITUDE	-111.58 DEG
C LAT	3.29	DEG	CD	008.8	KM	LONG	-81.14	DEG	N.DEV.	9.70	DEG	PHASE ANG	107.41 DEG	
D LAT	-75.00	DEG	DA	712.2	KM					ALPHA				-25.12 DEG
MEDIUM RESOLUTION														
CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION											
A LAT	52.24	DEG	AB	691.1	KM	A LAT	76.64	DEG	AB	599.4	KM	A LONG	-110.41	DEG
B LAT	38.82	DEG	BC	701.2	KM	B LAT	43.34	DEG	BC	292.7	KM	C LAT	-102.76	DEG
C LAT	3.29	DEG	CD	008.8	KM	C LAT	40.98	DEG	CD	048.8	KM	D LAT	-115.43	DEG
D LAT	-75.00	DEG	DA	712.2	KM	D LAT	73.08	DEG	D LAT	-145.56	DEG			
5008														
MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR.	MO.	DAY	HR.	MI.	SEC	ALT RT	2651.93	KM	9.66	DEG	SUN AZIM	259.78 DEG	LATITUDE	59.49 DEG
1122	10	.72	06	00	06	ALT RT	0.6595	KM/SEC	285.34	DEG	INCID ANG	82.31 DEG	LATITUDE	-111.50 DEG
A LAT	52.36	DEG	AB	695.2	KM	SWING ANG	89.71	DEG	EMISS ANG	25.10 DEG		PHASE ANG	107.41 DEG	
B LAT	38.59	DEG	BC	716.7	KM	N.DEV.	9.61	DEG	ALPHA	-25.10 DEG				
C LAT	2.79	DEG	CD	998.3	KM									
D LAT	-74.56	DEG	DA	714.3	KM									
MEDIUM RESOLUTION														
CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION											
A LAT	52.36	DEG	AB	695.2	KM	A LAT	76.58	DEG	AB	000.0	KM	A LONG	-110.21	DEG
B LAT	38.59	DEG	BC	716.7	KM	B LAT	43.25	DEG	BC	293.0	KM	C LAT	-102.73	DEG
C LAT	2.79	DEG	CD	998.3	KM	C LAT	43.89	DEG	CD	049.4	KM	D LAT	-115.39	DEG
D LAT	-74.56	DEG	DA	714.3	KM	D LAT	73.05	DEG	D LAT	-145.29	DEG			
5009														
MISSION/ FRAME NO.		TIME	S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
YR.	MO.	DAY	HR.	MI.	SEC	ALT RT	2651.93	KM	9.66	DEG	SUN AZIM	259.78 DEG	LATITUDE	59.49 DEG
1122	10	.72	06	00	06	ALT RT	0.6595	KM/SEC	285.34	DEG	INCID ANG	82.31 DEG	LATITUDE	-111.50 DEG
A LAT	52.36	DEG	AB	695.2	KM	SWING ANG	89.71	DEG	EMISS ANG	25.10 DEG		PHASE ANG	107.41 DEG	
B LAT	38.59	DEG	BC	716.7	KM	N.DEV.	9.61	DEG	ALPHA	-25.10 DEG				
C LAT	2.79	DEG	CD	998.3	KM									
D LAT	-74.56	DEG	DA	714.3	KM									
MEDIUM RESOLUTION														
CORNER COORDINATE	SIDE LENGTH		HIGH RESOLUTION											
A LAT	52.36	DEG	AB	695.2	KM	A LAT	76.58	DEG	AB	000.0	KM	A LONG	-110.21	DEG
B LAT	38.59	DEG	BC	716.7	KM	B LAT	43.25	DEG	BC	293.0	KM	C LAT	-102.73	DEG
C LAT	2.79	DEG	CD	998.3	KM	C LAT	43.89	DEG	CD	049.4	KM	D LAT	-115.39	DEG
D LAT	-74.56	DEG	DA	714.3	KM	D LAT	73.05	DEG	D LAT	-145.29	DEG			

LUNAR CRIBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
4.0	ALT ALT P/T	2653.7° 9-6591 KM/SEC	KN TILT AZIM SWING ANG LAT 58°.85 DEG LONG -81°.12 DEG	9.65° 285°.19° 69.37° N.DEV.	DEG DEG DEG DEG	SUN AZIM INCID ANG EMSS ANG PHASE ANG	259°.85° 82°.34° 25.37° 107°.41°
						LATITUDE	59°.43°
						LONGITUDE	-111°.43°

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	52.47 DEG	AB 639.6 K
A LONG	26.36 DEG	BC 732.1 K
B LAT	2.27 DEG	CD 591.3 K
B LONG	-74.52 DEG	DA 716.6 K
C LAT	1.97 DEG	TILT DISTANCE
C LONG	-111.45 DEG	13.5
D LAT	67.58 DEG	
D LONG	88.68 DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	76-52 DEG	AB
A LONG	-110-01 DEG	BC
B LAT	43-15 DEG	CD
B LONG	-102-70 DEG	DA
C LAT	40-81 DEG	TIL
C LONG	-115-35 DEG	
D LAT	73-00 DEG	
D LONG	-145-02 DEG	

MISSIONS
FRAME NC.
55010

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 2.65545 KM	TILT ANG 9.63 DEG	SUN AZIM 259.93 DEG	LATITUDE 59.37 DEG
ALT RT 0.6591 KM/SEC	TILT AZIM 285.03 DEG	INCID ANG 82.37 DEG	LONGITUDE -111.35 DEG
LAT 58.82 DEG	SWING ANG 89.37 DEG	EWISS ANG 25.05 DEG	
LONG -81.11 DFG	N.DEV. 9.44 DEG	PHASE ANG 107.41 DEG	
	.	ALPHA -25.04 DEG	

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER	COORDINATE	COORDINATE	COORDINATE
A LAT	52°-58'	DEG	AB 704°-5 K
A LONG	38°-13'	DEG	BC 749°-8 K
B LAT	1°-73'	DEG	CD 609°-2 K
B LONG	-74°-68'	DEG	DA 719°-3 K
C LAT	E-68'	DEG	TILT DISTAL
C LONG	-102°-04'	DEG	13.5
D LAT	67°-77'	DEG	
D LONG	AP-57'	DEG	

TRANS. RESOLUTION	SIDE	
COORDINATE	COORDINATE	
A LAT	76.46 DEG	AB 2
A LONG	-109.82 DEG	BC 2
B LAT	43.07 DEG	CD 2
B LONG	-102.66 DEG	DA 2
C LAT	40.72 DEG	TILT
C LONG	-115.32 DEG	
D LAT	72.99 DEG	

LUNAR GRANITE PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 08/16/77

FRAME NO.	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
5011	YR-MO-DY 67G06 HR-MI-SEC 112118.74	ALT ALT RT 2657.22 0.6589 KM/SEC	TIET ANG TILT AZIM 284.87 DEG SWING ANG 89.21 DEG N.DEV. -81.10 DEG LONG	SUN AZIM 260.00 DEG INCID ANG 82.39 DEG EMISS. ANG 25.02 DEG PHASE ANG 107.41 DEG ALPHA	LATITUDE 59.30 DEG LONGITUDE -111.28 DEG

MEDYLL BESONGITTEN

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 52° 48 DEG	AB 709.8 KM	A LAT 76° 40 DEG	AB 001.8 KM
A LONG 37° 91 DEG	BC 707.6 KM	A LONG -109.62 DEG	BC 293.7 KM
A LONG 1° 16 DEG	CD 619.2 KM	B LAT 42° 99 DEG	CD 051.42 KM
B LONG -74° 84 DEG	DA 721.5 KM	B LONG -102° 63 DEG	DA 292.4 KM
C LAT 8° 44 DEG	TILT DISTANCE 13.5	C LAT 40° 64 DEG	TIILT DISTANC 03.1
C LONG -102° 07 DEG		C LONG -115.28 DEG	
D LAT 67° 56 DEG		D LONG -72.97 DEG	
D LONG 88° 45 DEG		D LONG -114.52 DEG	

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 9.61 DEG	SUN AZIM 260.08 DEG	LATITUDE 59.24 DEG
TILT AZIM 284.72 DEG	INCID ANG 82.42 DEG	LONGITUDE -111.20 DEG
SWING ANG 89.04 DEG	EWISS ANG 25.00 DEG	
NODEV. 9.26 DEG	PHASE ANG 101.41 DEG	
	ALPHA -24.99 DEG	

S/C POSITION		MEDIUM RESOLUTION	
E	SIDE LENGTH	COORDINATE	COORDINATE
806	AB 715.8	A LAT 52° 7' 8" DEG	A LAT 52° 7' 8" DEG
221.40	BC 786.5	A LONG 37° 6' 8" DEG	B LAT 0° 55' 5" DEG
	CD 529.4	B LONG -74° 50' 0" DEG	C LAT 8° 12' 1" DEG
	DA 724.2	C LONG -102° 0' 0" DEG	D LAT 68° 15' 0" DEG
	TILT DIST 13.4	D LONG 88° 34' 0" DEG	

MISSION /

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

5013
YR, MO, DY
HR, MI, SEC
133225.30
-

TIME
671EC6
ALT RT
LAT 11.15 DEG
LONG -74.61 DEG
-

S/C POSITION
ALT 5755.32 KM
0.1654 KM/SEC
LAT 11.15 DEG
LONG -74.61 DEG

S/C ORIENTATION
TILT ANG 7.62 DEG
TILT AZIM 279.65 DEG
SWING ANG 92.51 DEG
N.DEV. 359.71 DEG

PHOTO ILLUMINATION
SUN AZIM 270.83 DEG
INCID ANG 87.26 DEG
EMISS ANG 34.89 DEG
PHASE ANG 122.11 DEG
ALPHA. -34.85 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 26.57 DEG AB 624.4 KM
A LONG 1.54 DEG BC 881.0 KM
B LAT -25.41 DEG CD 456.4 KM
B LONG -21.83 DEG DA 431.1 KM
C LAT -2.51 DEG TILT DISTANCE 10.6
C LONG -28.61 DEG
D LAT 10.78 DEG
D LONG -24.59 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 56.12 DEG AB 277.2 KM
A LONG -99.46 DEG BC 376.6 KM
B LAT -25.85 DEG CD 121.5 KM
B LONG -100.47 DEG DA 152.4 KM
C LAT -26.76 DEG TILT DISTANCE 81.4
C LONG -136.65 DEG
D LAT 48.99 DEG
D LONG -153.51 DEG

MISSION/
FRAME NO.

5014
YR, MO, DY
HR, MI, SEC
123327.72
-

TIME
670E06
ALT RT
LAT 11.14 DEG
LONG -74.61 DEG

S/C POSITION
ALT 5755.77 KM
0.1653 KM/SEC
LAT 11.14 DEG
LONG -74.61 DEG

S/C ORIENTATION
TILT ANG 7.61 DEG
TILT AZIM 279.58 DEG
SWING ANG 92.43 DEG
N.DEV. 359.68 DEG

PHOTO ILLUMINATION
SUN AZIM 270.84 DEG
INCID ANG 87.27 DEG
EMISS ANG 34.88 DEG
PHASE ANG 122.11 DEG
ALPHA. -34.84 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 26.53 DEG AB 622.8 KM
A LONG 1.37 DEG BC 885.5 KM
B LAT -25.51 DEG CD 457.8 KM
B LONG -21.71 DEG DA 431.2 KM
C LAT -2.57 DEG TILT DISTANCE 10.6
C LONG -28.58 DEG
D LAT 10.73 DEG
D LONG -24.58 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 56.04 DEG AB 277.1 KM
A LONG -99.39 DEG BC 378.5 KM
B LAT -25.92 DEG CD 129.8 KM
B LONG -100.49 DEG DA 134.5 KM
C LAT -26.90 DEG TILT DISTANCE 81.3
C LONG -136.91 DEG
D LAT 48.94 DEG
D LONG -152.41 DEG

PRINCIPAL POINT
LATITUDE 14.32 DEG
LONGITUDE -102.40 DEG

PRINCIPAL POINT
LATITUDE 14.27 DEG
LONGITUDE -102.39 DEG

PRINCIPAL POINT
LATITUDE 14.27 DEG
LONGITUDE -102.39 DEG

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MISSION/
FRAME NO.TIME
YR. MO. DY
HR. MI. SECS/C POSITION
ALT RT 5756.22 KH
0.1652 KH/SEC
LAT 11.13 DEG
LONG -74.61 DEGS/C ORIENTATION
TILT ANG 7.51 DEG
TILT AZIM 279.50 DEG
SWING ANG 92.35 DEG
N.DEV. 359.65 DEGPHOTO ILLUMINATION
SUN AZIM 270.84 DEG
INCID ANG 87.26 DEG
EMISS ANG 34.87 DEG
PHASE ANG 122.11 DEG
ALPHA -34.83 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 26.50 DEG AB 621.3 KM
A LONG 1.21 DEG BC 690.0 KM
B LAT -25.61 DEG CD 459.1 KM
B LONG -21.59 DEG DA 431.2 KM
C LAT -3.02 DEG TILT DISTANCE
C LONG -2E.56 DEG 10.6
D LAT 10.09 DEG
D LONG -24.58 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.97 DEG AB 277.0 KM
A LONG -99.33 DEG BC 380.5 KM
B LAT -25.99 DEG CD 138.6 KM
B LONG -100.51 DEG DA 120.6 KM
C LAT -27.05 DEG TILT DISTANCE
C LONG -137.18 DEG B1.3
D LAT 48.89 DEG
D LONG -151.53 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.97 DEG AB 277.0 KM
A LONG -99.33 DEG BC 380.5 KM
B LAT -25.99 DEG CD 138.6 KM
B LONG -100.51 DEG DA 120.6 KM
C LAT -27.05 DEG TILT DISTANCE
C LONG -137.18 DEG B1.3
D LAT 48.89 DEG
D LONG -151.53 DEGMISSION/
FRAME NO.TIME
YR. MO. DY
HR. MI. SECS/C POSITION
ALT RT 5756.66 KH
0.1650 KH/SEC
LAT 11.12 DEG
LONG -74.60 DEGS/C ORIENTATION
TILT ANG 7.61 DEG
TILT AZIM 279.42 DEG
SWING ANG 92.27 DEG
N.DEV. 359.62 DEGPHOTO ILLUMINATION
SUN AZIM 270.85 DEG
INCID ANG 87.29 DEG
EMISS ANG 34.85 DEG
PHASE ANG 122.11 DEG
ALPHA -34.82 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.89 DEG AB 277.0 KM
A LONG -99.26 DEG BC 382.4 KM
B LAT -26.06 DEG CD 147.8 KM
B LONG -100.53 DEG DA 108.8 KM
C LAT -27.21 DEG TILT DISTANCE
C LONG -137.46 DEG B1.3
D LAT 48.84 DEG
D LONG -150.78 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.89 DEG AB 277.0 KM
A LONG -99.26 DEG BC 382.4 KM
B LAT -26.06 DEG CD 147.8 KM
B LONG -100.53 DEG DA 108.8 KM
C LAT -27.21 DEG TILT DISTANCE
C LONG -137.46 DEG B1.3
D LAT 48.84 DEG
D LONG -150.78 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 55.89 DEG AB 277.0 KM
A LONG -99.26 DEG BC 382.4 KM
B LAT -26.06 DEG CD 147.8 KM
B LONG -100.53 DEG DA 108.8 KM
C LAT -27.21 DEG TILT DISTANCE
C LONG -137.46 DEG B1.3
D LAT 48.84 DEG
D LONG -150.78 DEG

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MISSION/
FRAME NO.SO17
YR.MO.DY
HR.MI.SECTIME
6708C6
133335.80

S/C POSITION
 ALT 5757.1 KM
 ALT RT 0.1649 KM/SEC
 LAT 11.11 DEG
 LONG -74.60 DEG

S/C ORIENTATION
 TILT ANG 7.61 DEG
 TILT AZIM 279.34 DEG
 SWING ANG 92.19 DEG
 NDEV. 359.59 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 25.44 DEG AB 664.1 KM
 A LONG 4.36 DEG BC 899.2 KM
 B LAT -25.82 DEG CD 461.6 KM
 B LONG -21.33 DEG DA 431.2 KM
 C LAT -3.13 DEG TILT DISTANCE
 C LONG -28.51 DEG 10.6
 D LAT 10.59 DEG
 D LONG -24.57 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 55.82 DEG AB 276.9 KM
 A LONG -99.19 DEG BC 384.4 KM
 B LAT -26.14 DEG CD 157.6 KM
 B LONG -100.55 DEG DA 998.6 KM
 C LAT -27.37 DEG TILT DISTANCE
 C LONG -137.77 DEG 91.2
 D LAT 48.79 DEG
 D LONG -150.12 DEG

MISSION/
FRAME NO.SO18
YR.MO.DY
HR.MI.SECTIME
670806
133338.48

S/C POSITION
 ALT 5757.55 KM
 ALT RT 0.1648 KM/SEC
 LAT 11.10 DEG
 LONG -74.60 DEG

S/C ORIENTATION
 TILT ANG 7.60 DEG
 TILT AZIM 279.26 DEG
 SWING ANG 92.11 DEG
 NDEV. 359.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 26.43 DEG AB 659.9 KM
 A LONG 3.92 DEG BC 903.9 KM
 B LAT -25.92 DEG CD 463.2 KM
 B LONG -21.21 DEG DA 431.3 KM
 C LAT -3.18 DEG TILT DISTANCE
 C LONG -28.49 DEG 10.6
 D LAT 10.54 DEG
 D LONG -24.56 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 55.74 DEG AB 276.9 KM
 A LONG -99.13 DEG BC 386.3 KM
 B LAT -26.21 DEG CD 168.1 KM
 B LONG -100.57 DEG DA 989.4 KM
 C LAT -27.54 DEG TILT DISTANCE
 C LONG -138.10 DEG B1.2
 D LAT 48.74 DEG
 D LONG -149.52 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/10/71

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MISSION/
FRAME NO.5019
YR.MO.DY
HR.MI.SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	5757.99 KM	TILT ANG	SUN AZIM	270.86 DEG	LATITUDE
ALT RT	0.1646 KM/SEC	TILT AZIM	87.31 DEG	LONGITUDE	14.04 DEG
LAT	11.09 DEG	SWING ANG	92.03 DEG	EMISS ANG	-192.34 DEG
LONG	-74.60 DEG	N.DEV.	359.54 DEG	PHASE ANG	122.11 DEG
				ALPHA	-34.79 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 26.41 DEG	AB 656.6 KM
A LONG 3.58 DEG	BC 508.5 KM
B LAT -26.02 DEG	CD 464.5 KM
B LONG -21.08 DEG	DA 431.3 KM
C LAT -3.23 DEG	TILT DISTANCE 10.6
C LONG -28.47 DEG	
D LAT 10.50 DEG	
D LONG -24.56 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 55.67 DEG	AB 276.8 KM
A LONG -99.07 DEG	BC 388.3 KM
B LAT -26.28 DEG	CD 179.5 KM
B LONG -103.60 DEG	DA 081.1 KM
C LAT -27.72 DEG	TILT DISTANCE 81.2
C LONG -138.47 DEG	
D LAT 48.68 DEG	
D LONG -148.97 DEG	

MISSION/
FRAME NO.5020
YR.MO.DY
HR.MI.SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	5758.42 KM	TILT ANG	SUN AZIM	270.87 DEG	LATITUDE
ALT RT	0.1645 KM/SEC	TILT AZIM	87.32 DEG	LONGITUDE	14.00 DEG
LAT	11.08 DEG	SWING ANG	91.95 DEG	EMISS ANG	-102.33 DEG
LONG	-74.60 DEG	N.DEV.	359.51 DEG	PHASE ANG	122.11 DEG
				ALPHA	-34.78 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 26.39 DEG	AB 653.8 KM
A LONG 3.27 DEG	BC 913.3 KM
B LAT -26.12 DEG	CD 465.9 KM
B LONG -20.94 DEG	DA 431.3 KM
C LAT -3.29 DEG	TILT DISTANCE 10.6
C LONG -28.44 DEG	
D LAT 10.45 DEG	
D LONG -24.55 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 55.59 DEG	AB 276.8 KM
A LONG -99.00 DEG	BC 390.2 KM
B LAT -26.35 DEG	CD 192.1 KM
B LONG -100.62 DEG	DA 178.1 KM
C LAT -27.91 DEG	TILT DISTANCE 81.2
C LONG -138.88 DEG	
D LAT 49.11 DEG	
D LONG -154.98 DEG	

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MISSION/
FRAME NO.

5021 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670806 ALT 3341.53 KM TILT ANG 16.79 DEG SUN AZIM 343.51 DEG LATITUDE -85.19 DEG
 HR, MI, SEC 1717 6.31 ALT RT -0.5753 KM/SEC TILT AZIM 187.07 DEG INCID ANG 86.87 DEG LONGITUDE -175.38 DEG
 LAT -50.72 DEG SWING ANG 25.53 DEG EMISS ANG 57.64 DEG
 LONG -69.07 DEG N.DEV. 283.49 DEG PHASE ANG 119.51 DEG
 ALPHA -34.34 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -27.95 DEG AB 618.4 KM
 A LONG -49.77 DEG BC 0. KM
 B LAT 0. DEG CD 0. KM
 B LONG 0. DEG DA 038.0 KM
 C LAT 0. DEG TILT DISTANCE 23.8
 C LONG 0. DEG
 D LAT -15.32 DEG D LAT -62.50 DEG
 D LONG -142.14 DEG D LONG -105.31 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -62.45 DEG AB 413.3 KM
 A LONG -81.28 DEG BC 269.0 KM
 B LAT -75.75 DEG CD 332.7 KM
 B LONG -96.14 DEG DA 333.9 KM
 C LAT -73.49 DEG TILT DISTANCE 83.6
 C LONG 149.49 DEG
 D LAT -62.50 DEG
 D LONG -105.31 DEG

MISSION/
FRAME NO.

5022 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670807 ALT 51.06 KM TILT ANG 9.66 DEG SUN AZIM 274.50 DEG LATITUDE -26.96 DEG
 HR, MI, SEC 003459.61 ALT RT -0.3124 KM/SEC TILT AZIM 259.65 DEG INCID ANG 84.46 DEG LONGITUDE -112.55 DEG
 LAT -25.65 DEG SWING ANG 91.20 DEG EM155 ANG 41.42 DEG
 LONG -77.04 DEG N.DEV. 356.84 DEG PHASE ANG 125.87 DEG
 ALPHA -41.40 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 9.14 DEG AB 036.7 KM
 A LONG -108.52 DEG BC 729.3 KM
 B LAT -62.56 DEG CD 572.2 KM
 B LONG -114.07 DEG DA 984.6 KM
 C LAT -47.77 DEG TILT DISTANCE 03.6
 C LONG -170.94 DEG
 D LAT 7.49 DEG
 D LONG -136.50 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -62.45 DEG AB 413.3 KM
 A LONG -81.28 DEG BC 269.0 KM
 B LAT -75.75 DEG CD 332.7 KM
 B LONG -96.14 DEG DA 333.9 KM
 C LAT -73.49 DEG TILT DISTANCE 83.6
 C LONG 149.49 DEG
 D LAT -62.50 DEG
 D LONG -105.31 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION/ FRAME NO. TIME FULL LIST ORDERED BY MISSION AND FRAME NUMBER PAGE 415

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 5008.71 KM	TILT ANG. 8.67 DEG	SUN AZIM 267.82 DEG	LATITUDE 26.54 DEG
ALT RT 0.3409 KM/SEC	TILT AZIM. 281.77 DEG	INCID ANG 82.34 DEG	LONGITUDE -120.17 DEG
LA 24.01 DEG	SWING ANG 89.99 DEG	EMISS ANG 36.78 DEG	
LONG -89.35 DEG	N.DEV. 1.31 DEG	PHASE ANG 119.12 DEG	
		ALPHA -36.78 DEG	

MISSION RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
MEDIUM	A LAT 35.82 DEG	AB 347.3 KM	CORNER COORDINATE
	A LONG -6.11 DEG	BC 489.6 KM	SIDE LENGTH
	B LAT -40.25 DEG	CD 388.2 KM	A LAT 61.14 DEG
	B LONG -49.56 DEG	DA 358.2 KM	A LONG -116.75 DEG
	C LAT 8.69 DEG	TILT DISTANCE	B LAT -7.97 DEG
	C LONG -57.86 DEG	12.4	B LONG -116.62 DEG
	D LAT 19.55 DEG		C LAT -17.87 DEG
	D LONG -52.58 DEG		C LONG -151.58 DEG
			D LAT 53.92 DEG
			D LONG 175.99 DEG

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 2551.47 KM	TILT ANG. 9.97 DEG	SUN AZIM 284.12 DEG	LATITUDE 59.08 DEG
ALT RT 0.6902 KM/SEC	TILT AZIM 284.79 DEG	INCID ANG 81.66 DEG	LONGITUDE -129.77 DEG
LAT 58.75 DEG	SWING ANG 88.79 DEG	EMISS ANG 25.31 DEG	
LONG -99.81 DEG	N.DEV. 9.38. DEG	PHASE ANG 105.96 DEG	
		ALPHA -25.31 DEG	

MISSION RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
MEDIUM	A LAT 55.57 DEG	AB 483.5 KM	CORNER COORDINATE
	A LONG 12.06 DEG	BC 469.1 KM	SIDE LENGTH
	B LAT 7.88 DEG	CD 0. KM	A LAT 75.48 DEG
	B LONG -94.39 DEG	DA 0. KM	A LONG -128.17 DEG
	C LAT C. DEG	TILT DISTANCE	B LAT 43.44 DEG
	C LONG 0. DEG	13.9	B LONG -121.32 DEG
	D LAT 0. DEG		C LAT 41.15 DEG
	D LONG 0. DEG		C LONG -133.58 DEG
			D LAT 72.38 DEG
			D LONG -160.31 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

04/19/71

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MISSION/
FRAME NO.

5026 YR, MO, DY 67GB08 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC 0142 5.01 ALT RT 5069.05 KM TILT ANG 9.43 DEG SUN AZIM 274.41 DEG LATITUDE -27.65 DEG
LAT -0.3300 KM/SEC TILT AZIM 258.46 DEG INCID ANG 84.79 DEG LONGITUDE -125.06 DEG
LONG -25.62 DEG SWING ANG 89.54 DEG EMISS ANG 39.98 DEG
N.DEV. -90.85 DEG N.DEV. 356.34 DEG PHASE ANG 124.76 DEG
ALPHA -39.98 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 35.82 DEG AB 453.8 KM
A LONG -56.82 DEG BC 391.9 KM
B LAT -42.99 DEG CD 405.6 KM
B LONG -6.37 DEG DA 359.5 KM
C LAT -21.42 DEG TILT DISTANCE 13.2'
C LONG -56.26 DEG
D LAT -10.46 DEG
D LONG -61.05 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 7.40 DEG AB 011.8 KM
A LONG -120.26 DEG BC 696.5 KM
B LAT -63.23 DEG CD 933.9 KM
B LONG -126.97 DEG DA 076.9 KM
C LAT -49.13 DEG TILT DISTANCE 01.1
C LONG 174.43 DEG
D LAT 12.78 DEG
D LONG -152.59 DEG

MISSION/
FRAME NO.

5027 YR, MO, DY 670808 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC 0905 0.11 ALT RT 5872.85 KM TILT ANG 85.48 DEG SUN AZIM 264.93 DEG LATITUDE -11.64 DEG
LAT -0.1403 KM/SEC TILT AZIM 95.55 DEG INCID ANG 119.93 DEG LONGITUDE -91.87 DEG
LONG -11.23 DEG SWING ANG 105.91 DEG EMISS ANG 90.00 DEG
N.DEV. -96.46 DEG N.DEV. 195.91 DEG PHASE ANG 31.36 DEG
ALPHA 90.00 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE 13.4'
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0. DEG AB 0. KM
A LONG 0. DEG BC 0. KM
B LAT 0. DEG CD 0. KM
B LONG 0. DEG DA 0. KM
C LAT 0. DEG TILT DISTANCE 01.2
C LONG 0. DEG
D LAT 0. DEG
D LONG 0. DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.5028
YR. MO. DY
HR. MI. SECTIME
670608
ALT RT
0.3397 KM/SEC
LAT
24.16 DEG
LONG
-103.16 DEG
N.DEV.
...S/C POSITION
ALT 5015.44 KM
TILT ANG 8.66 DEG
TILT AZIM 281.13 DEG
SWING ANG 89.71 DEG
PHASE ANG 117.96 DEG
ALPHA -35.84 DEGS/C ORIENTATION
TILT ANG 8.66 DEG
INCID ANG 82.11 DEG
EMISS ANG 35.84 DEG
PHASE ANG 117.96 DEGPHOTO ILLUMINATION
SUN AZIM 267.72 DEG
LATITUDE 26.39 DEG
LONGITUDE -133.19 DEGMISSION/
FRAME NO.5029
YR. MO. DY
HR. MI. SECTIME
67C089
ALT RT
0.6911 KM/SEC
LAT
59.08 DEG
LONG
-113.56 DEG
N.DEV.
...S/C POSITION
ALT 254.818 KM
TILT ANG 10.99 DEG
TILT AZIM 284.66 DEG
SWING ANG 90.22 DEG
PHASE ANG 12.99 DEG
ALPHA -28.07 DEGS/C ORIENTATION
TILT ANG 10.99 DEG
INCID ANG 79.35 DEG
EMISS ANG 28.08 DEG
PHASE ANG 107.42 DEGPHOTO ILLUMINATION
SUN AZIM 254.71 DEG
INCID ANG 284.71 DEG
EMISS ANG 28.08 DEG
PHASE ANG 107.42 DEGMISSION/
FRAME NO.TIME
215121.31
ALT RT
0.6911 KM/SEC
LAT
59.08 DEG
LONG
-113.56 DEG
N.DEV.
...S/C POSITION
ALT 254.818 KM
TILT ANG 10.99 DEG
TILT AZIM 284.66 DEG
SWING ANG 90.22 DEG
PHASE ANG 12.99 DEG
ALPHA -28.07 DEGS/C ORIENTATION
TILT ANG 10.99 DEG
INCID ANG 79.35 DEG
EMISS ANG 28.08 DEG
PHASE ANG 107.42 DEGPHOTO ILLUMINATION
SUN AZIM 254.71 DEG
INCID ANG 284.71 DEG
EMISS ANG 28.08 DEG
PHASE ANG 107.42 DEGMISSION/
FRAME NO.TIME
67C089
ALT RT
0.6911 KM/SEC
LAT
59.08 DEG
LONG
-113.56 DEG
N.DEV.
...S/C POSITION
ALT 254.818 KM
TILT ANG 10.99 DEG
TILT AZIM 284.66 DEG
SWING ANG 90.22 DEG
PHASE ANG 12.99 DEG
ALPHA -28.07 DEGS/C ORIENTATION
TILT ANG 10.99 DEG
INCID ANG 79.35 DEG
EMISS ANG 28.08 DEG
PHASE ANG 107.42 DEGPHOTO ILLUMINATION
SUN AZIM 254.71 DEG
INCID ANG 284.71 DEG
EMISS ANG 28.08 DEG
PHASE ANG 107.42 DEGMISSION/
FRAME NO.TIME
215121.31
ALT RT
0.6911 KM/SEC
LAT
59.08 DEG
LONG
-113.56 DEG
N.DEV.
...S/C POSITION
ALT 254.818 KM
TILT ANG 10.99 DEG
TILT AZIM 284.66 DEG
SWING ANG 90.22 DEG
PHASE ANG 12.99 DEG
ALPHA -28.07 DEGS/C ORIENTATION
TILT ANG 10.99 DEG
INCID ANG 79.35 DEG
EMISS ANG 28.08 DEG
PHASE ANG 107.42 DEGPHOTO ILLUMINATION
SUN AZIM 254.71 DEG
INCID ANG 284.71 DEG
EMISS ANG 28.08 DEG
PHASE ANG 107.42 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.5030
YR.MD.DY
HR.MI.SEC

TIME

S/C POSITION
ALT 5068.60 KM
ALT RT -0.3305 KM/SEC
LAT -25.33 DEG
LONG -104.74 DEG
NDEV. 356.97 DEGS/C ORIENTATION
TILT ANG 9.57 DEG
TILT AZIM 201.53 DEG
SWING ANG 92.15 DEG
NDEV. 356.97 DEGPHOTO ILLUMINATION
SUN AZIM 274.89 DEG
INCID ANG 83.32 DEG
EMISS ANG 40.65 DEG
PHASE ANG 123.95 DEG
ALPHA -40.63 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 38.80 DEG AB 406.2 KM
A LONG -68.74 DEG BC 149.3 KM
B LAT -44.44 DEG CD 392.8 KM
B LONG -31.61 DEG DA 359.2 KM
C LAT -26.44 DEG TILT DISTANCE 13.4
C LONG -71.34 DEG C LONG 165.73 DEG 02.5
D LAT -9.33 DEG D LAT 7.98 DEG
D LONG -75.68 DEG D LONG -161.91 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 10.18 DEG AB 018.0 KM
A LONG -135.27 DEG BC 654.0 KM
B LAT -60.80 DEG CD 450.0 KM
B LONG -139.82 DEG DA 939.4 KM
C LAT -49.74 DEG TILT DISTANCE
C LONG 165.73 DEG 02.5
D LAT 7.98 DEG
D LONG -161.91 DEGMISSION/
FRAME NO.5031
YR.MD.DY
HR.MI.SEC

TIME

S/C POSITION
ALT 1363.52 KM
ALT RT 0.1875 KM/SEC
LAT 26.13 DEG
LONG -113.59 DEG
NDEV. 359.11 DEGS/C ORIENTATION
TILT ANG 21.85 DEG
TILT AZIM 280.21 DEG
SWING ANG 89.14 DEG
NDEV. 359.11 DEGPHOTO ILLUMINATION
SUN AZIM 270.77 DEG
INCID ANG 88.33 DEG
EMISS ANG 41.64 DEG
PHASE ANG 129.97 DEG
ALPHA -41.64 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 44.92 DEG AB 124.2 KM
A LONG -111.91 DEG BC 568.9 KM
B LAT 7.73 DEG CD 565.9 KM
B LONG -119.57 DEG DA 246.3 KM
C LAT C.69 DEG TILT DISTANCE 31.9
C LONG -145.61 DEG
D LAT 54.15 DEG
D LONG -150.57 DEGCORNER COORDINATE SIDE LENGTH
A LAT 37.06 DEG AB 557.5 KM
A LONG -132.52 DEG BC 205.6 KM
B LAT 18.60 DEG CD 608.1 KM
B LONG -133.42 DEG DA 203.3 KM
C LAT 17.76 DEG TILT DISTANCE 44.0
C LONG -140.51 DEG
D LAT 37.93 DEG
D LONG -140.91 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT LAT RT LONG	S/C ORIENTATION TILT ANG TILT AZIM SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT	
					21.33 280.73 90.08 358.56	DEG DEG DEG DEG DEG
MEDIUM RESOLUTION						
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT LAT RT LONG	S/C ORIENTATION TILT ANG TILT AZIM SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT	PRINCIPAL POINT
5032	670ec9 155741.21	1396.82 KM 0.1642 KM/SEC 22.61 DEG -116.73 DEG	21.33 271.23 DEG 89.19 DEG 41.02 DEG 130.20 DEG -41.02 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	LATITUDE LONGITUDE	24.81 DEG -138.12 DEG
HIGH RESOLUTION						
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT LAT RT LONG	S/C ORIENTATION TILT ANG TILT AZIM SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT	PRINCIPAL POINT
5033	670ec9 20543.22	145.32 KM -0.1826 KM/SEC -25.64 DEG 60.19 DEG	5.43 DEG 135.70 DEG 40.71 DEG 85.32 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	LATITUDE LONGITUDE	24.81 DEG -138.12 DEG
MEDIUM RESOLUTION						
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT LAT RT LONG	S/C ORIENTATION TILT ANG TILT AZIM SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT	PRINCIPAL POINT
5033	670ec9 20543.22	105.5 KM 0.1238 KM 99.0 KM 7.4	5.43 DEG 135.70 DEG 5.88 DEG 75.20 DEG -3.38 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	LATITUDE LONGITUDE	24.81 DEG -138.12 DEG
HIGH RESOLUTION						
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION ALT LAT RT LONG	S/C ORIENTATION TILT ANG TILT AZIM SWING ANG N.DEV.	PHOTO ILLUMINATION SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	PRINCIPAL POINT	PRINCIPAL POINT
5033	670ec9 20543.22	116.3 KM 0.1238 KM 99.0 KM 7.4	5.43 DEG 135.70 DEG 5.88 DEG 75.20 DEG -3.38 DEG	SUN AZIM INCID ANG EMISS ANG PHASE ANG ALPHA	LATITUDE LONGITUDE	24.81 DEG -138.12 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.5034
YR.MD.DY
HR.MI.SEC
TIME
670809
205749.88

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
ALT 144.11 KM	TILT ANG 5.20 DEG	SUN AZIM 79.21 DEG
ALT RT -0.1803 KM/SEC	TIKT AZIM 132.60 DEG	INCID ANG 71.78 DEG
LAT -25.28 DEG	SWING ANG 37.62 DEG	EMISS ANG 5.63 DEG
LONG 60.23 DEG	N.DEV. 85.31 DEG	PHASE ANG 75.20 DEG
		ALPHA -3.48 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -23.81 DEG	AB 117.3 KM	CORNER COORDINATE
A LONG 58.67 DEG	BC 104.5 KM	A LAT -25.28 DEG
B LAT -24.03 DEG	CD 122.4 KM	A LONG 59.65 DEG
B LONG 62.90 DEG	DA 98.0 KM	B LAT -25.42 DEG
C LAT -27.48 DEG	TIKT DISTANCE	B LONG 61.56 DEG
C LONG 62.75 DEG	7.0	C LAT -25.86 DEG
D LAT -27.02 DEG		C LONG 61.53 DEG
D LONG 58.24 DEG		D LAT -25.71 DEG

MISSION/
FRAME NO.
5035
YR.MD.DY
HR.MI.SEC
TIME
670809
205756.44

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
ALT 142.93 KM	TILT ANG 4.99 DEG	SUN AZIM 79.32 DEG
ALT RT -0.1781 KM/SEC	TIKT AZIM 129.27 DEG	INCID ANG 71.67 DEG
LAT -24.92 DEG	SWING ANG 34.29 DEG	EMISS ANG 5.40 DEG
LONG 60.27 DEG	N.DEV. 85.30 DEG	PHASE ANG 75.20 DEG
		ALPHA -3.58 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT -23.43 DEG	AB 116.5 KM	CORNER COORDINATE
A LONG 58.73 DEG	BC 103.5 KM	A LAT -24.89 DEG
B LAT -23.65 DEG	CD 121.0 KM	A LONG 59.71 DEG
B LONG 62.92 DEG	DA 97.1 KM	B LAT -25.03 DEG
C LAT -27.07 DEG	TIKT DISTANCE	B LONG 61.59 DEG
C LONG 62.76 DEG	6.7	C LAT -25.47 DEG
D LAT -26.61 DEG		C LONG 61.56 DEG
D LONG 58.31 DEG		D LAT -25.31 DEG
		D LONG 59.67 DEG

SUN AZIM	LATITUDE	PRINCIPAL POINT
79.21 DEG	25.57 DEG	60.58 DEG
71.78 DEG		
5.63 DEG		
75.20 DEG		
-3.48 DEG		

SUN AZIM	LATITUDE	PRINCIPAL POINT
79.32 DEG	25.18 DEG	60.62 DEG
71.67 DEG		
5.40 DEG		
75.20 DEG		
-3.58 DEG		

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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X8-MD-
MISSION/
FRAME NO.
5036

TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
	ALT	KM	ALT ANG	DEG	SUN AZIM	79.42 DEG	LATITUDE	-24.79 DEG
67CE09 2056 2.90	141.79	KM	4.80	DEG	INCID ANG	71.57 DEG	LONGITUDE	60.66 DEG
	ALT RT	-0.1759	KM/SEC		TILT AZIM	129.72 DEG		
	LAT	-24.56	DEG		SWING ANG	30.75 DEG		
	LONG	60.30	DEG	N.DEV.		85.29 DEG		
					PHASE ANG	75.20 DEG		
					ALPHA	-3.68 DEG		

CORNER	COORDINATE	SIDE	LE
A LAT	-23°.06 DEG	AB	115.
A LONG	58°.78 DEG	BC	102.
B LAT	-23°.28 DEG	CD	119.
B LONG	62°.94 DEG	DA	96.
C LAT	-26°.66 DEG	TILT	DI
C LONG	62°.77 DEG		
D LAT	-26°.21 DEG		
D LONG	58°.38 DEG		

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	"24-51 DEG	AB
A LONG	59-76 DEG	BC
B LAT	-24-65 DEG	CD
B LONG	61-62 DEG	DA
C LAT	-25-08 DEG	TILT
C LONG	61-59 DEG	
D LAT	-24-93 DEG	
D LONG	59-72 DEG	

PHOTO ILLUMINATION		PRINCIPAL POINT	
SUN AZIM	81.50 DEG	LATITUDE	-18.95 DEG
INCID ANG	70.83 DEG	LONGITUDE	57.14 DEG
EMISS ANG	3.98 DEG		
PHASE ANG	67.08 DEG		
ALPHA	3.74 DEG		

MISSION /
FRAME NO.
5072

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 3.62 DEG	SUN AZIM 81.50 DEG	LATITUDE -16.95 DEG
TILT AZIM 246.45 DEG	INCID ANG 70.83 DEG	LONGITUDE 57.14 DEG
SWING ANG 151.00 DEG	EMISS ANG 3.98 DEG	
N.DEV. 84.41 DEG	PHASE ANG 67.08 DEG	
	ALPHA 3.74 DEG	

MEDIUM RESOLUTION		HIGH RESOLUTION	
CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -17°.32 DEG	AB 101.9 KM	A LAT -18°.69 DEG	AB 0.0 KM
A LONG 55°.48 DEG	BC 84.8 KM	A' LONG 56°.37 DEG	BC 11.2 KM
B LAT -17°.71 DEG	CD 104.2 KM	B LAT -18°.84 DEG	CD 45.1 KM
B LONG 58°.98 DEG	DA 89.3 KM	B' LONG 57°.93 DEG	DA 11.4 KM
C LAT -20°.50 DEG	TILT DISTANCE		5.2
C LONG 55.2	E-E°.76 DEG	C LAT -19°.20 DEG	
D LAT -20°.52 DEG	D LONG 55°.10 DEG	C LONG 57°.90 DEG	3B.5
D LONG 56°.33 DEG	D LAT -19.05 DEG	D LONG 56°.33 DEG	

HIGH RESOLUTION
COORDINATE SIGNS
-18.69 DEG AB
55.32 DEG AC

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MISSION /

FRAME NO.

5038 YR. NO. OY
HR. MI. SEC

TIME

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 103.08 KM	TILT ANG 59.39 DEG	SUN AZIM 88.21 DEG	LATITUDE -0.95 DEG
ALT RT -0.0159 KM/SEC	TIILT AZIM 269.69 DEG	INCID ANG 73.88 DEG	LONGITUDE 49.14 DEG
LAT -0.92 DEG	SWING ANG 177.96 DEG	EMIS ANG 65.76 DEG	
LONG 55.52 DEG	N.DEV. 87.14 DEG	PHASE ANG 8.25 DEG	
		ALPHA 65.39 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 5.00 DEG	AB 392.2 KM	CORNER COORDINATE SIDE LENGTH
A LONG 39.25 DEG	BC 84.9 KM	A LAT -0.21 DEG AB 280.1 KM
B LAT 0.37 DEG	CD 142.1 KM	A LONG 42.15 DEG BC 14.7 KM
B LONG 52.53 DEG	DA 243.0 KM	B LAT -0.74 DEG CD 294.2 KM
C LAT -2.43 DEG	TIILT DISTANCE	B LONG 51.41 DEG DA 41.7 KM
C LONG 52.76 DEG	35.7	C LAT -1.23 DEG TILT DISTANCE
D LAT -5.09 DEG		C LONG 51.37 DEG 28.9
D LONG 43.56 DEG		D LAT -1.48 DEG

MISSION /

FRAME NO.

5039 YR. NO. OY
HR. MI. SEC

TIME

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 1252.42 KM	TILT ANG 26.78 DEG	SUN AZIM 263.63 DEG	LATITUDE 38.71 DEG
ALT RT 0.2500 KM/SEC	TIILT AZIM 263.18 DEG	INCID ANG 79.81 DEG	LONGITUDE -159.45 DEG
LAT 37.14 DEG	SWING ANG 89.39 DEG	EMIS ANG 50.85 DEG	
LONG -128.86 DEG	N.DEV.	PHASE ANG 130.66 DEG	
	3.14 DEG	ALPHA -50.85 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 55.44 DEG	AB 043.1 KM	CORNER COORDINATE SIDE LENGTH
A LONG -132.02 DEG	BC 454.7 KM	A LAT 47.97 DEG AB 54.87 KM
B LAT 20.94 DEG	CD 0. KM	A LONG -156.71 DEG BC 252.8 KM
B LONG -139.62 DEG	DA 541.5 KM	B LAT 29.81 DEG CD 620.8 KM
C LAT 0. DEG	TIILT DISTANCE	B LONG -155.52 DEG DA 249.0 KM
C LONG 0. DEG	4.0.2	C LAT 27.73 DEG TILT DISTANCE
D LAT 61.28 DEG		C LONG -164.74 DEG 07.1
D LONG 150.68 DEG		D LAT 48.05 DEG

D LONG -169.02 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION / FRAME NG. TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT

5040	YR. MO. DY	67CE10	ALT	163.74 KM	TILT ANG	15.45 DEG	SUN AZIM	77.73 DEG	LATITUDE	-31.29 DEG
	HR. MI. SEC	125148.01	ALT RT	-0.2144 KM/SEC	TILT AZIM	110.72 DEG	INCID ANG	73.37 DEG	LONGITUDE	51.96 DEG
			LAT	-30.94 DEG	SWING ANG	15.74 DEG	EMISS ANG	11.46 DEG		
			LONG	55.87 DEG	N.DEV.	.85.95 DEG	PHASE ANG	83.12 DEG		
							ALPHA	-9.84 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT	-25.24 DEG	A LAT	-32.96 DEG
A LONG	45.70 DEG	A LONG	50.85 DEG
B LAT	-29.40 DEG	B LAT	-31.11 DEG
B LONG	54.55 DEG	B LONG	53.20 DEG
C LAT	-33.59 DEG	C LAT	-31.63 DEG
C LONG	54.65 DEG	C LONG	53.17 DEG
D LAT	-32.88 DEG	D LAT	-31.44 DEG
D LONG	45.22 DEG	D LONG	50.80 DEG

MISSION / FRAME NG. TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT

5041	YR. MO. DY	67CE15	ALT	103.27 KM	TILT ANG	53.52 DEG	SUN AZIM	87.84 DEG	LATITUDE	-2.06 DEG
	HR. MI. SEC	161125.41	ALT RT	-0.2263 KM/SEC	TILT AZIM	274.10 DEG	INCID ANG	72.35 DEG	LONGITUDE	46.97 DEG
			LAT	-2.41 DEG	SWING ANG	178.82 DEG	EMISS ANG	58.42 DEG		
			LONG	51.87 DEG	N.DEV.	.86.52 DEG	PHASE ANG	15.53 DEG		
							ALPHA	56.22 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT	5.00 DEG	A LAT	-1.39 DEG
A LONG	25.06 DEG	A LONG	43.84 DEG
B LAT	-2.99 DEG	B LAT	-1.98 DEG
B LONG	45.86 DEG	B LONG	48.58 DEG
C LAT	-3.58 DEG	C LAT	-2.40 DEG
C LONG	45.62 DEG	C LONG	48.54 DEG
D LAT	-6.76 DEG	D LAT	-2.18 DEG
D LONG	35.24 DEG	D LONG	43.73 DEG

MISSION / FRAME NG. TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT

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MISSION /

FRAME NG.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL

POINT

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MISSION/

FRAME NO.
5042
YR.HD.DY
HR.MI.SEC

TIME
670810

S/C POSITION
ALT 102.35 KM

TILT ANG 50.93 DEG

TILT AZIM 268.58 DEG

SWING ANG 72.43 DEG

EMIS ANG 55.71 DEG

PHASE ANG 17.13 DEG

ALPHA 55.30 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 4.74 DEG AB 450.1 KM

A LONG 32.22 DEG BC 75.9 KM

B LAT 3.19 DEG CD 127.5 KM

B LONG 46.65 DEG DA 271.3 KM

C LAT -2.32 DEG TILT DISTANCE

C LONG 46.80 DEG 98.8

D LAT -5.57 DEG

D LONG 34.56 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -0.60 DEG AB 117.3 KM

A LONG 41.64 DEG BC 12.3 KM

B LAT -0.82 DEG CD 119.8 KM

B LONG 45.51 DEG DA 21.5 KM

C LAT -1.23 DEG TILT DISTANCE

C LONG 45.48 DEG 49.7

D LAT -1.29 DEG

D LONG 41.51 DEG

S/C ORIENTATION

PHOTO ILLUMINATION

SUN AZIM 88.16 DEG

INCID ANG 72.43 DEG

EMIS ANG 55.71 DEG

PHASE ANG 17.13 DEG

ALPHA 55.30 DEG

PRINCIPAL POINT

LATITUDE -0.99 DEG

LONGITUDE 44.10 DEG

MISSION/

FRAME NO.
5043
YR.HD.DY
HR.MI.SEC

TIME
035621-21

S/C POSITION
ALT 1190.57 KM

TILT ANG 20.20 DEG

TILT AZIM 252.29 DEG

SWING ANG 90.31 DEG

N.DEV. 1.71 DEG

ALPHA 129.91 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -39.61 DEG AB 472.6 KM

A LONG -149.22 DEG BC 154.6 KM

B LAT -55.22 DEG CD 506.0 KM

B LONG -147.44 DEG DA 155.0 KM

C LAT -55.92 DEG C LONG -156.39 DEG

D LAT -39.16 DEG D LONG -155.82 DEG

PRINCIPAL POINT

LATITUDE -47.53 DEG

LONGITUDE -151.45 DEG

PHOTO ILLUMINATION

SUN AZIM 267.43 DEG

INCID ANG 94.32 DEG

EMIS ANG 35.60 DEG

PHASE ANG 129.91 DEG

ALPHA -35.59 DEG

PRINCIPAL POINT

LATITUDE -47.53 DEG

LONGITUDE -151.45 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT -29.28 DEG AB 970.3 KM

A LONG -136.14 DEG BC 345.8 KM

B LAT -60.13 DEG CD 312.1 KM

B LONG -121.25 DEG DA 043.6 KM

C LAT -64.05 DEG TILT DISTANCE

C LONG 136.62 DEG 29.3

D LAT -12.23 DEG

D LONG -176.42 DEG

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MISSION/
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 101.94 KM ALT RT -9.0131 KM/SEC LAT -0.71 DEG LONG 43.22 DEG	TILT ANG 4.66 DEG TILT AZIM 273.58 DEG SWING ANG 178.71 DEG N.DEV. 85.15 DEG	SUN AZIM 88.17 DEG INCID ANG 68.71 DEG EMISS ANG 4.93 DEG PHASE ANG 63.80 DEG ALPHA 4.91 DEG	LATITUDE -0.70 DEG LONGITUDE 42.94 DEG
MEDIUM RESOLUTION			
CORNER COORDINATE SIDE LENGTH	HIGH RESOLUTION		
A LAT 0.65 DEG AB 84.5 KM A LONG 41.59 DEG BC 68.5 KM B LAT 0.33 DEG CD 84.5 KM B LONG 44.27 DEG DA 73.8 KM C LAT -1.53 DEG TILT DISTANCE 5.7 C LONG 44.18 DEG D LAT -1.78 DEG D LONG 41.38 DEG	A LAT -0.49 DEG A LONG 42.34 DEG B LAT -0.60 DEG B LONG 43.55 DEG C LAT -0.90 DEG C LONG 43.53 DEG D LAT -0.80 DEG D LONG 42.31 DEG	SIDE LENGTH AB 37.0 KM BC 9.1 KM CD 37.0 KM DA 9.4 KM TILT DISTANCE 49.6	CORNER COORDINATE SIDE LENGTH A LAT -0.43 DEG A LONG 42.96 DEG B LAT -0.63 DEG B LONG 43.55 DEG C LAT -0.90 DEG C LONG 43.80 DEG D LAT -0.80 DEG D LONG 42.31 DEG

MISSION/
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 101.88 KM ALT RT -0.0113 KM/SEC LAT -0.46 DEG LONG 43.24 DEG	TILT ANG 4.66 DEG TILT AZIM 276.73 DEG SWING ANG 181.88 DEG N.DEV. 85.17 DEG	SUN AZIM 88.28 DEG INCID ANG 68.68 DEG EMISS ANG 4.94 DEG PHASE ANG 63.80 DEG ALPHA 4.88 DEG	LATITUDE -0.43 DEG LONGITUDE 42.96 DEG
MEDIUM RESOLUTION			
CORNER COORDINATE SIDE LENGTH	HIGH RESOLUTION		
A LAT C.92 DEG AB 84.6 KM A LONG 41.61 DEG BC 68.5 KM B LAT 0.60 DEG CD 84.4 KM B LONG 44.39 DEG DA 73.8 KM C LAT -1.66 DEG TILT DISTANCE 6.7 C LONG 44.20 DEG D LAT -1.51 DEG D LONG 41.41 DEG	A LAT -0.42 DEG A LONG 42.36 DEG B LAT -0.33 DEG B LONG 43.58 DEG C LAT -0.63 DEG C LONG 43.55 DEG D LAT -0.53 DEG D LONG 42.33 DEG	SIDE LENGTH AB 37.0 KM BC 9.1 KM CD 37.0 KM DA 9.4 KM TILT DISTANCE 49.6	CORNER COORDINATE SIDE LENGTH A LAT -0.43 DEG A LONG 42.96 DEG B LAT -0.63 DEG B LONG 43.55 DEG C LAT -0.90 DEG C LONG 43.80 DEG D LAT -0.80 DEG D LONG 42.31 DEG

LUNAR GREITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION / MISSION FRAME NO.*	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
504B	570E01	ALT 101°-90 KH ALT RT -0.0157 KH/SEC	ALT ANG 24°-80 DEG TILT ANG 96°-35 DEG SWING ANG 1.80 DEG N.DEV. 85°-13 DEG	SUN AZIM 87°-69 DEG INCID ANG 67°-07 DEG EMISS ANG 26°-36 DEG PHASE ANG 93°-18 DEG	LATITUDE +1.26 DEG LONGITUDE 42.98 DEG
YR MO. DY HR. MI. SEC	111535.11	LAT ~3°-09 LONG ~41°-42	DEG	DEG	DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	-0.07 DEG	AB 109.3 KM
A LONG	41.65 DEG	BC 110.1 KM
B LAT	0.19 DEG	CD 110.9 KM
B LONG	45.26 DEG	DA 65.3 KM
C LAT	-3.08 DEG	TILT DISTANCE
C LONG	45.05 DEG	36.6
D LAT	-2.22 DEG	
D LONG	41.46 DEG	

HIGH RESOLUTION		SIDE
COORDINATE		
COORDINATE	CORNER	
A LAT	A	-1.05 DEG
A LONG	A	42.31 DEG
B LAT	B	-1.15 DEG
B LONG	B	43.82 DEG
C LAT	C	-1.52 DEG
C LONG	C	43.79 DEG
D LAT	D	-1.36 DEG
D LONG	D	42.28 DEG

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
24.80 DEG	87.89 DEG	-1.26 DEG
TILT, AZIM	INCID ANG	LONGITUDE
96.35 DEG	67.07 DEG	42.98 DEG
SWING ANG	EMISS ANG	
1.80 DEG	26.36 DEG	
N.DEV.	PHASE ANG	
85.13 DEG	93.18 DEG	
	ALPHA	-26.15 DEG

PHOTO ILLUMINATION	SUN AZIM	INCID ANG	EMISS ANG	PHASE ANG	POINT	LATITUDE	LONGITUDE
4.80 DEG	87.89 DEG	67.07 DEG	26.36 DEG	93.18 DEG	-1.26 DEG		
6.35 DEG							42.98 DEG
5.80 DEG							
5.13 DEG							
ALPHA						-26.15 DEG	

INTRODUCTION

MISSION FRAME NO.	TIME			S/C POSITION			S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT				
	YR	MO	DAY	ALT	101-85	KM	ALT	0-0.13	KM/SEC	ALT AZIM	95.75	DEG	INCID ANG	67.04	DEG	LATITUDE	"0.97
HR	MI	SEC	LAT	-0.82	DEG	LONG	41.45	DEG	SWING ANG	1.14	DEG	SWISS ANG	36.36	DEG	LONGITUDE	43.03	DEG
5049	67	06	11	111	39	.91			N.DEV.	86.01	DEG	PHASE ANG	93.18	DEG			

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	0.22 DEG	AB 109.5 KM
A LONG	41.68 DEG	BC 99.0 KM
B LAT	0.49 DEG	BD 110.6 KM
B LONG	45.25 DEG	DA 65.2 KM
C LAT	-2.78 DEG	DC ... TILT DISTAN
C LONG	45.06 DEG	36.6
D LAT	-1.93 DEG	
D LONG	41.91 DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	-0.76	DEG AB 45.8 KM
A LONG	42.33	DEG BC 11.2 KM
B LAT	-0.85	DEG CD 45.8 KM
B LONG	43.84	DEG DA 9.4 KM
C LAT	-1.22	DEG TILT DISTANCE B1=1
C LONG	43.82	DEG
D LAT	-1.07	DEG
D LONG	42.31	DEG

PHOTO ILLUMINATION	SUN AZIM	88.-01 DEG	PRINCIPAL POINT	LATITUDE	" 0.97 DEG
INCID ANG	67.-04 DEG		LONGITUDE	43.03 DEG	
EMISS ANG	26.-36 DEG				
PHASE ANG	93.-16 DEG				
ALPHA	-25.-18 DEG				

	PHOTO ILLUMINATION	PRINCIPAL POINT	
	N AZIM	LATITUDE	" 0.97 DEG
	CID ANG	LONGITUDE	43.03 DEG
ISS ANG	26.36 DEG		
IASF ANG	93.18 DEG		
PHA	-25.18 DEG		

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MISSION/
FRAME NO.

5050 YR, MO, DY 670811 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC 111644.91 ALT RT -0.0118 KM/SEC TILT ANG 24.79 DEG SUN AZIM 88.14 DEG LATITUDE -0.67 DEG
LAT -0.53 DEG TILT AZIM 95.13 DEG INCID ANG 67.00 DEG LONGITUDE 43.03 DEG
LONG 41.47 DEG SWING ANG 0.46 DEG EMISS ANG 26.35 DEG
N.DEV. 85.87 DEG PHASE ANG 93.18 DEG
ALPHA -26.21 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.53 DEG AB 109.8 KM
A LONG 41.71 DEG BC 98.9 KM
B LAT 0.79 DEG CD 119.2 KM
B LONG 45.33 DEG DA 65.2 KM
C LAT -2.47 DEG TILT DISTANCE 36.6
C LONG 45.08 DEG
D LAT -1.62 DEG
D LONG 41.53 DEG

S/C POSITION TILT ANG 24.79 DEG SUN AZIM 88.14 DEG LATITUDE -0.67 DEG
ALT RT -0.0098 KM/SEC TILT AZIM 94.53 DEG INCID ANG 66.97 DEG LONGITUDE 43.05 DEG
LAT -0.25 DEG SWING ANG 359.80 DEG EMISS ANG 26.35 DEG
LONG 41.49 DEG N.DEV. 85.74 DEG PHASE ANG 93.18 DEG
ALPHA -26.24 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.46 DEG AB 45.8 KM
A LONG 42.36 DEG BC 11.2 KM
B LAT -0.55 DEG CD 45.8 KM
B LONG 43.87 DEG DA 9.4 KM
C LAT -0.92 DEG TILT DISTANCE 81.1
C LONG 43.84 DEG
D LAT -0.77 DEG
D LONG 42.33 DEG

MISSION/
FRAME NO.

5051 YR, MO, DY 670811 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
HR, MI, SEC 111649.71 ALT RT -0.0098 KM/SEC TILT ANG 24.79 DEG SUN AZIM 88.27 DEG LATITUDE -0.38 DEG
LAT -0.25 DEG TILT AZIM 94.53 DEG INCID ANG 66.97 DEG LONGITUDE 43.05 DEG
LONG 41.49 DEG SWING ANG 359.80 DEG EMISS ANG 26.35 DEG
N.DEV. 85.74 DEG PHASE ANG 93.18 DEG
ALPHA -26.24 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.32 DEG AB 110.3 KM
A LONG 41.73 DEG BC 98.9 KM
B LAT 1.09 DEG CD 109.8 KM
B LONG 45.36 DEG DA 65.1 KM
C LAT -2.17 DEG TILT DISTANCE 36.6
C LONG 45.09 DEG
D LAT -1.32 DEG
D LONG 41.56 DEG

S/C POSITION TILT ANG 24.79 DEG SUN AZIM 88.27 DEG LATITUDE -0.38 DEG
ALT RT -0.0098 KM/SEC TILT AZIM 94.53 DEG INCID ANG 66.97 DEG LONGITUDE 43.05 DEG
LAT -0.25 DEG SWING ANG 359.80 DEG EMISS ANG 26.35 DEG
LONG 41.49 DEG N.DEV. 85.74 DEG PHASE ANG 93.18 DEG
ALPHA -26.24 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -0.16 DEG AB 45.7 KM
A LONG 42.38 DEG BC 11.2 KM
B LAT -0.26 DEG CD 45.7 KM
B LONG 43.89 DEG DA 9.4 KM
C LAT -0.63 DEG TILT DISTANCE 81.1
C LONG 43.86 DEG
D LAT -0.47 DEG
D LONG 42.36 DEG

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MISSION/
FRAME NO.

5052 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 675811 ALT RT 109.67 KM TILT ANG 51.58 DEG SUN AZIM 89.39 DEG LATITUDE 2.91 DEG
 HR.MI.SEC 143C52.11 ALT RT 0.0126 KM/SEC TILT AZIM 269.52 DEG INCID ANG 72.74 DEG LONGITUDE 35.59 DEG
 LAT 2.95 DEG SWING ANG 177.10 DEG EMISS ANG 55.99 DEG
 LONG 40.00 DFG N.DEV. 87.50 DEG PHASE ANG 16.75 DEG
 ALPHA 55.99 DEG

MISSION/
FRAME NO.

5052 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 675811 ALT RT 1150.50 KM TILT ANG 25.58 DEG SUN AZIM 261.88 DEG LATITUDE 48.85 DEG
 HR.MI.SEC 184C 5.71 ALT RT 0.2778 KM/SEC TILT AZIM 297.39 DEG INCID ANG 80.80 DEG LONGITUDE ~176.10 DEG
 LAT 42.56 DEG SWING ANG 106.97 DEG EMISS ANG 45.71 DEG
 LONG ~146.99 DFG N.DEV. 12.64 DEG PHASE ANG 125.83 DEG
 ALPHA -45.27 DEG

MISSION/
FRAME NO.

5053 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 675811 ALT RT 1150.50 KM TILT ANG 25.58 DEG SUN AZIM 261.88 DEG LATITUDE 48.85 DEG
 HR.MI.SEC 184C 5.71 ALT RT 0.2778 KM/SEC TILT AZIM 297.39 DEG INCID ANG 80.80 DEG LONGITUDE ~176.10 DEG
 LAT 42.56 DEG SWING ANG 106.97 DEG EMISS ANG 45.71 DEG
 LONG ~146.99 DFG N.DEV. 12.64 DEG PHASE ANG 125.83 DEG
 ALPHA -45.27 DEG

MISSION/
FRAME NO.

5053 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 675811 ALT RT 1150.50 KM TILT ANG 25.58 DEG SUN AZIM 261.88 DEG LATITUDE 48.85 DEG
 HR.MI.SEC 184C 5.71 ALT RT 0.2778 KM/SEC TILT AZIM 297.39 DEG INCID ANG 80.80 DEG LONGITUDE ~176.10 DEG
 LAT 42.56 DEG SWING ANG 106.97 DEG EMISS ANG 45.71 DEG
 LONG ~146.99 DFG N.DEV. 12.64 DEG PHASE ANG 125.83 DEG
 ALPHA -45.27 DEG

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MISSION/
FRAME NO.

5054

YR, MO, DY
HR, MI, SEC

TIME

S/C POSITION
 ALT 132.77 KM
 ALT RT -0.1618 KM/SEC
 LAT -22.62 DEG
 LONG 34.26 DEG
 N.DEV. 40.18 DEG

S/C ORIENTATION
 TILT ANG 57.97 DEG
 TILT AZIM 227.83 DEG
 SWING ANG 11.35 DEG
 N.DEV. 40.18 DEG

PHOTO ILLUMINATION
 SUN AZIM 82.40 DEG
 INCID ANG 79.62 DEG
 EMISS ANG 65.63 DEG
 PHASE ANG 23.55 DEG
 ALPHA 25.54 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -23.38 DEG AB 161.4 KM
 A LONG 27.43 DEG BC 164.9 KM
 B LAT -25.43 DEG CD 661.4 KM
 B LONG 22.81 DEG DA 6. KM
 C LAT -41.93 DEG TILT DISTANCE 26.8
 C LONG 24.59 DEG
 D LAT 5. DEG
 D LONG 0. DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT -26.73 DEG AB 117.0 KM
 A LONG 25.89 DEG BC 45.6 KM
 B LAT -27.41 DEG CD 162.3 KM
 B LONG 31.16 DEG DA 89.9 KM
 C LAT -28.71 DEG TILT DISTANCE 66.4
 C LONG 29.29 DEG
 D LAT -28.48 DEG
 D LONG 23.19 DEG

MISSION/
FRAME NO.

5055

YR, MO, DY
HR, MI, SEC

TIME

S/C POSITION
 ALT 100.14 KM
 ALT RT 0.0375 KM/SEC
 LAT 2.19 DEG
 LONG 34.67 DEG
 N.DEV. 85.29 DEG

S/C ORIENTATION
 TILT ANG 8.34 DEG
 TILT AZIM 272.08 DEG
 SWING ANG 177.33 DEG
 N.DEV. 85.29 DEG

PHOTO ILLUMINATION
 SUN AZIM 89.29 DEG
 INCID ANG 69.28 DEG
 EMISS ANG 6.92 DEG
 PHASE ANG 60.47 DEG
 ALPHA 8.81 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 3.58 DEG AB 84.6 KM
 A LONG 32.79 DEG BC 66.1 KM
 B LAT 3.29 DEG CD 85.7 KM
 B LONG 25.56 DEG DA 75.3 KM
 C LAT 1.62 DEG TILT DISTANCE 11.8
 C LONG 35.39 DEG
 D LAT 1.10 DEG
 D LONG 32.98 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 2.42 DEG AB 36.9 KM
 A LONG 33.57 DEG BC 8.9 KM
 B LAT 2.31 DEG CD 27.0 KM
 B LONG 34.79 DEG DA 9.4 KM
 C LAT 2.02 DEG TILT DISTANCE 89.1
 C LONG 34.76 DEG
 D LAT 2.11 DEG
 D LONG 33.55 DEG

PRINCIPAL POINT

27.74 DEG

LATITUDE

27.72 DEG

PRINCIPAL POINT

117.0 KM

LATITUDE

45.6 KM

PRINCIPAL POINT

162.3 KM

LATITUDE

89.9 KM

PRINCIPAL POINT

29.29 DEG

LATITUDE

60.47 DEG

PRINCIPAL POINT

8.81 DEG

LATITUDE

6.92 DEG

PRINCIPAL POINT

36.9 KM

LATITUDE

8.9 KM

PRINCIPAL POINT

27.0 KM

LATITUDE

9.4 KM

PRINCIPAL POINT

34.76 DEG

LATITUDE

2.11 DEG

PRINCIPAL POINT

33.55 DEG

LATITUDE

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MISSION/
FRAME NO.

5056 YR. MO. DY 670812
HR. MIN. SEC 0024 0.58
S/C POSITION ALT RT 107.18 KM
ALT AZIM 273.84 DEG
LAT 2.45 DEG SWING ANG 179.11 DEG
LONG 76.69 DEG N.DEV. 95.33 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 7.05 DEG	AB 86.7 KM
A LONG 32.81 DEG	AC 45.1 KM
B LAT 3.47 DEG	CD 86.3 KM
B LONG 35.59 DEG	DA 75.3 KM
C LAT 1.30 DEG	TILT DISTANCE 11.9
C LONG 36.81 DEG	
D LAT 1.37 DEG	
D LONG 32.61 DEG	

S/C ORIENTATION TILT ANG 8.13 DEG
TILT AZIM 273.84 DEG
SWING ANG 179.11 DEG
N.DEV. 95.33 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 2.49 DEG	AB 36.9 KM
A LONG 33.59 DEG	AC 8.3 KM
B LAT 2.58 DEG	CD 27.0 KM
B LONG 34.81 DEG	DA 9.4 KM
C LAT 2.29 DEG	TILT DISTANCE 89.0
C LONG 34.79 DEG	
D LAT 2.36 DEG	
D LONG 33.57 DEG	

MISSION/
FRAME NO.

5057 YR. MO. DY 670812
HR. MIN. SEC 0024 0.59
S/C POSITION ALT RT 107.23 KM
ALT AZIM 275.84 DEG
LAT 2.71 DEG SWING ANG 181.88 DEG
LONG 34.71 DEG N.DEV. 85.37 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 4.12 DEG	AB 84.9 KM
A LONG 22.82 DEG	BC 45.1 KM
B LAT 3.75 DEG	CD 84.7 KM
B LONG 35.61 DEG	DA 75.4 KM
C LAT 1.57 DEG	TILT DISTANCE 11.3
C LONG 26.43 DEG	
D LAT 1.64 DEG	
D LONG 32.63 DEG	

S/C ORIENTATION TILT ANG 8.33 DEG
TILT AZIM 275.84 DEG
SWING ANG 181.88 DEG
N.DEV. 85.37 DEG

CORNER COORDINATE	SIDE LENGTH
A LAT 2.96 DEG	AB 37.2 KM
A LONG 33.62 DEG	BC 8.9 KM
B LAT 2.85 DEG	CD 37.0 KM
B LONG 34.83 DEG	DA 9.4 KM
C LAT 2.56 DEG	TILT DISTANCE 89.0
C LONG 34.81 DEG	
D LAT 2.65 DEG	
D LONG 33.55 DEG	

PHOTO ILLUMINATION SUN AZIM 89.5A DEG
INCID ANG 49.23 DEG
EMISS ANG 8.81 DEG
PHASE ANG 50.47 DEG

PHOTO ILLUMINATION SUN AZIM 89.5A DEG
INCID ANG 49.23 DEG
EMISS ANG 8.81 DEG
PHASE ANG 50.47 DEG

PHOTO ILLUMINATION SUN AZIM 89.5A DEG
INCID ANG 49.23 DEG
EMISS ANG 8.81 DEG
PHASE ANG 50.47 DEG

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MISSION/
FRAME NO.

S/CSS	TIME'	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
67C612	ALT RT	100.28 KM 0.0129 KM/SEC	TILT ANG R.33 DEG TILT AZIM 277.36 DEG SWING ANG 182.66 DEG N.DEV.	SUN AZIM 89.40 DEG INCID ANG 59.21 DEG EMISS ANG 8.82 DEG PHASE ANG 85.41 DEG ALPHA 8.47 DEG	LATITUDE 1.33 DEG LONGITUDE 14.25 DEG
000413.50	ALT RT	2.95 DEG			
	LAT	36.72 DEG			
	LONG	36.41 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 4.40 DEG	AB 85.1 KM	A LAT 3.23 DEG	AB 27.3 KM
A LONG 32.85 DEG	BC 55.2 KM	A LONG 31.64 DEG	BC 8.9 KM
B LAT 4.57 DEG	CD 84.6 KM	B LAT 3.12 DEG	CD 37.0 KM
B LONG 35.64 DEG	DA 75.4 KM	B LONG 34.86 DEG	DA 9.4 KM
C LAT 1.84 DEG	TILT DISTANCE	C LAT 2.83 DEG	TILT DISTANCE
C LONG 35.46 DEG	11.8	C LONG 34.87 DEG	89.1
D LAT 1.52 DEG		D LAT 2.92 DEG	
D LONG 32.56 DEG		D LONG 33.61 DEG	

MISSION/
FRAME NO.

S/CSS	TIME'	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
67C612	ALT RT	100.02 KM 0.0085 KM/SEC	TILT ANG 22.55 DEG TILT AZIM 96.19 DEG SWING ANG 1.52 DEG N.DEV.	SUN AZIM 89.33 DEG INCID ANG 67.54 DEG EMISS ANG 23.94 DEG PHASE ANG 91.33 DEG ALPHA -23.31 DEG	LATITUDE 2.17 DEG LONGITUDE 34.30 DEG
0315 8.71	ALT RT	2.32 DEG			
	LAT	32.93 DEG			
	LONG	32.91 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 3.75 DEG	AB 102.1 KM	A LAT 2.38 DEG	AB 4.3.2 KM
A LONG 23.13 DEG	BC 92.3 KM	A LONG 33.66 DEG	BC 19.7 KM
B LAT 3.54 DEG	CD 103.2 KM	B LAT 2.29 DEG	CD 4.3.2 KM
B LONG 36.41 DEG	DA 64.3 KM	B LONG 35.09 DEG	DA 9.1 KM
C LAT 0.48 DEG	TILT DISTANCE	C LAT 1.93 DEG	TILT DISTANCE
C LONG 36.18 DEG	32.9	C LONG 35.06 DEG	52.8
D LAT 1.24 DEG		D LAT 2.08 DEG	
D LONG 32.66 DEG		D LONG 33.64 DEG	

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MISSION

TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
	ALT	KM	TILT ANG	DEG	SUN AZIM	89.46 DEG	LATITUDE	2.47 DEG
06770812	100.06	KM	TILT ANG	22.55	DEG	SUN AZIM	89.46 DEG	LATITUDE
031513.51	0.0104	KM/SEC	TILT AZIM	95.52	DEG	INCID ANG	67.52 DEG	LONGITUDE
	2.60	DEG	SWING ANG	0.79	DEG	EMISS ANG	23.93 DEG	
	32.95	DEG	N.DEV.	85.69	DEG	PHASE ANG	91.33 DEG	
						AZIMA	07.00 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 3°.64 DEG	AB 102.5 KM	A LAT 2°.67 DEG	AB 4.3-2 KM
A LONG 33°.06 DEG	BC 92.8 KM	A LONG 33.69 DEG	BC 10.7 KM
B LAT 3°.83 DEG	CD 103.0 KM	B LAT 2°.58 DEG	CD 4.3-2 KM
B LONG 36°.44 DEG	DA 64.0 KM	B LONG 35.11 DEG	DA 9.1 KM
C LAT 0°.77 DEG	TILT DISTANCE	C LAT 2°.22 DEG	TILT DISTANCE
C LONG 36°.20 DEG	32.3	C LONG 35.09 DEG	52.7
D LAT 1°.33 DEG		D LAT 2°.37 DEG	
D LONG 32.88 DEG		D LONG 33.66 DEG	

MISSION /
EBANE NO.

TIME	S/C POSITION	S/C ORIENTATION			PHOTO ILLUMINATION	PRINCIPAL POINT	
		ALT	KM	TILT ANG	SUN AZIM	LATITUDE	LONGITUDE
1997-06-12 00:12:00	ALT RT	100.12	KM	22.55 DEG	89.58 DEG	2.76 DEG	
1997-06-12 00:12:00	ALT RT	0.0123	KM/SEC	94.85 DEG	INCID ANG	-67.49 DEG	
1997-06-12 00:12:00	LAT	2.88	DEG	SWING ANG	EMISS ANG	23.93 DEG	
1997-06-12 00:12:00	LONG	32.98	DEG	N.DEV.	PHASE ANG	91.33 DEG	
1997-06-12 00:12:00				85.57 DEG	ALPHA	-23.95 DEG	

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE	COORDINATE	
A LAT	3° 54' DEG	AB 102.
A LONG	33° 08' DEG	BC 92.
B LAT	4° 13' DEG	CD 102.
B LONG	36° 48' DEG	DA 64.
C LAT	1° 07' DEG	TILT DI 32.
C LONG	36° 22' DEG	
D LAT	1° 23' DEG	
D LONG	32° 51' DEG	

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
LAT	2.96 DEG	AB 4
LONG	33.71 DEG	BC 1
LAT	2.87 DEG	CD 4
LONG	35.14 DEG	DA
LAT	2.52 DEG	TI LT
LONG	35.11 DEG	5
LAT	2.66 DEG	
LONG	33.60 DEG	
LAT	2.73 DEG	
LONG	33.50 DEG	

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MISSION/

FRAME NO.

5062
YR.MD.DY 670E12
HR.MI.SEC 031E33.21
TIME ALT RT 130.18 KM
S/C POSITION TILT ANG 22.55 DEG
S/C ORIENTATION TILT AZIM 94.17 DEG
SWING ANG 359.33 DEG
N.DEV. 85.45 DEG
LAT 3.16 DEG
LONG 33.00 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 4.24 DEG AB 103.1 KM
A LONG 33.11 DEG BC 93.1 KM
B LAT 4.43 DEG CD 102.6 KM
B LONG 36.52 DEG DA 64.1 KM
C LAT 1.37 DEG TILT DISTANCE
C LONG 36.24 DEG 32.9
D LAT 2.13 DEG
D LONG 32.93 DEG

PHOTO ILLUMINATION
SUN AZIM 89.70 DEG
INCID ANG 67.46 DEG
EMISS ANG 23.93 DEG
PHASE ANG 91.33 DEG
ALPHA -23.88 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.26 DEG AB 43.3 KM
A LONG 33.74 DEG BC 10.7 KM
B LAT 3.17 DEG CD 43.3 KM
B LONG 35.17 DEG DA 9.1 KM
C LAT 2.81 DEG TILT DISTANCE
C LONG 35.14 DEG 52.7
D LAT 2.96 DEG
D LONG 33.71 DEG

PHOTO ILLUMINATION
SUN AZIM 88.28 DEG
INCID ANG 67.46 DEG
EMISS ANG 30.95 DEG
PHASE ANG 98.22 DEG
ALPHA -30.79 DEG

PRINCIPAL POINT
LATITUDE 30.96 DEG
LONGITUDE 34.38 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.81 DEG AB 120.2 KM
A LONG 31.45 DEG BC 106.9 KM
B LAT 1.19 DEG CD 120.8 KM
B LONG 35.41 DEG DA 64.1 KM
C LAT -2.33 DEG TILT DISTANCE
C LONG 25.43 DEG 44.1
D LAT -1.30 DEG
D LONG 31.28 DEG

PHOTO ILLUMINATION
SUN AZIM 89.70 DEG
INCID ANG 67.46 DEG
EMISS ANG 23.93 DEG
PHASE ANG 91.33 DEG
ALPHA -23.88 DEG

PRINCIPAL POINT
LATITUDE 30.96 DEG
LONGITUDE 34.38 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 0.16 DEG AB 48.9 KM
A LONG 32.11 DEG BC 11.7 KM
B LAT -0.26 DEG CD 48.9 KM
B LONG 33.72 DEG DA 9.4 KM
C LAT -0.64 DEG TILT DISTANCE
C LONG 33.69 DEG 36.8
D LAT -0.47 DEG
D LONG 32.08 DEG

PHOTO ILLUMINATION
SUN AZIM 88.28 DEG
INCID ANG 67.46 DEG
EMISS ANG 30.95 DEG
PHASE ANG 98.22 DEG
ALPHA -30.79 DEG

PRINCIPAL POINT
LATITUDE 30.96 DEG
LONGITUDE 34.38 DEG

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MISSION/
FRAME NO.5064
YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	67CE12	ALT 98.27 KM	TILT ANG 51.18 DEG	SUN AZIM 88.71 DEG	LATITUDE 0.72 DEG
	053CE13.31	ALT RT -0.0027 KM/SEC	TILT AZIM 269.24 DEG	INCID ANG 73.56 DEG	LONGITUDE 25.07 DEG
		LAT 0.78 DEG	SWING ANG 176.46 DEG	EMISS ANG 55.41 DEG	
		LONG 29.30 DEG	N.DEV. 86.93 DEG	PHASE ANG 18.15 DEG	
				ALPHA 55.40 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 6.68 DEG	AB 477.8 KM
A LONG 12.21 DEG	BC 72.9 KM
B LAT 1.65 DEG	CD 122.2 KM
B LONG 27.53 DEG	DA 250.1 KM
C LAT -9.55 DEG	TILT DISTANCE 99.7
C LONG 27.40 DEG	
D LAT -3.50 DEG	
D LONG 16.87 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 1.10 DEG	AB 113.7 KM
A LONG 22.68 DEG	BC 11.9 KM
B LAT 0.88 DEG	CD 115.7 KM
B LONG 26.43 DEG	DA 20.6 KM
C LAT 0.49 DEG	TILT DISTANCE 56.5
C LONG 26.40 DEG	
D LAT 0.43 DEG	
D LONG 22.58 DEG	

MISSION/
FRAME NO.5065
YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
	675E12	ALT 1191.99 KM	TILT ANG 19.92 DEG	SUN AZIM 268.06 DEG	LATITUDE -48.87 DEG
	114521.71	ALT RT -0.2772 KM/SEC	TILT AZIM 246.48 DEG	INCID ANG 93.61 DEG	LONGITUDE -168.65 DEG
		LAT -44.71 DEG	SWING ANG 82.52 DEG	EMISS ANG 35.08 DEG	
		LONG -147.27 DEG	N.DEV. 358.95 DEG	PHASE ANG 128.46 DEG	
				ALPHA -34.84 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -31.31 DEG	AB 977.5 KM
A LONG -152.47 DEG	BC 399.4 KM
B LAT -62.49 DEG	CD 403.2 KM
B LONG -137.09 DEG	DA 801.6 KM
C LAT -75.41 DEG	TILT DISTANCE 26.8
C LONG 145.46 DEG	
D LAT -22.50 DEG	
D LONG 171.52 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -41.10 DEG	AB 474.0 KM
A LONG -165.83 DEG	BC 157.7 KM
B LAT -55.79 DEG	CD 507.2 KM
B LONG -165.29 DEG	DA 148.5 KM
C LAT -57.43 DEG	TILT DISTANCE 20.6
C LONG -174.81 DEG	
D LAT -40.71 DEG	
D LONG -172.29 DEG	

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MISSION/
FRAME NO.5066
YR, MO, DY
HR, MI, SECTIME
670612
1254 0.79S/C POSITION
ALT 122.85 KM
ALT RT 0.1393 KM/SEC
LAT 21.42 DEG
LONG 29.29 DEGS/C ORIENTATION
TILT ANG 1.47 DEG
TILT AZIM 351.69 DEG
SWING ANG 256.91 DEG
N.DEV. 85.23 DEGPHOTO ILLUMINATION
SUN AZIM 97.13 DEG
INCID ANG 68.77 DEG
EMISS ANG 1.98 DEG
PHASE ANG 68.35 DEG
ALPHA 0.40 DEGPRINCIPAL POINT
LATITUDE 21.53 DEG
LONGITUDE 29.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 23.59 DEG AB 102.1 KM
A LONG 27.55 DEG BC 85.3 KM
B LAT 22.80 DEG CD 100.1 KM
B LONG 31.20 DEG DA 85.9 KM
C LAT 20.00 DEG TILT DISTANCE 2.1
C LONG 30.88 DEG 2.1
D LAT 20.25 DEG 2.1
D LONG 27.37 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 21.77 DEG AB 44.3 KM
A LONG 28.50 DEG BC 11.1 KM
B LAT 21.65 DEG CD 44.2 KM
B LONG 30.07 DEG DA 11.1 KM
C LAT 21.28 DEG TILT DISTANCE
C LONG 30.03 DEG 15.5
D LAT 21.46 DEG
D LONG 28.47 DEG

PHOTO ILLUMINATION

SUN AZIM 97.28 DEG
INCID ANG 68.78 DEG
EMISS ANG 1.92 DEG
PHASE ANG 68.36 DEG
ALPHA 0.41 DEGPRINCIPAL POINT
LATITUDE 21.87 DEG
LONGITUDE 29.33 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 123.67 KM
ALT RT 0.1414 KM/SEC
LAT 21.75 DEG
LONG 29.32 DEGS/C ORIENTATION
TILT ANG 1.79 DEG
TILT AZIM 354.10 DEG
SWING ANG 259.31 DEG
N.DEV. 85.22 DEGPHOTO ILLUMINATION
SUN AZIM 97.28 DEG
INCID ANG 68.78 DEG
EMISS ANG 1.92 DEG
PHASE ANG 68.36 DEG
ALPHA 0.41 DEGPRINCIPAL POINT
LATITUDE 21.87 DEG
LONGITUDE 29.33 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 22.12 DEG AB 44.6 KM
A LONG 28.52 DEG BC 11.2 KM
B LAT 21.99 DEG CD 44.5 KM
B LONG 30.11 DEG DA 11.2 KM
C LAT 21.63 DEG TILT DISTANCE
C LONG 30.07 DEG 19.0
D LAT 21.75 DEG
D LONG 28.50 DEG

PHOTO ILLUMINATION

SUN AZIM 97.28 DEG
INCID ANG 68.78 DEG
EMISS ANG 1.92 DEG
PHASE ANG 68.36 DEG
ALPHA 0.41 DEGPRINCIPAL POINT
LATITUDE 21.87 DEG
LONGITUDE 29.33 DEG

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR.MD.DY	HR.MI.SEC		ALT	TILT ANG	SUN AZIM	LATITUDE
5068	67CE12	125412.35	ALT RT 0.1436 KM/SEC	TILT AZIM 355.79 DEG SWING ANG 260.99 DEG N.DEV.	97.43 DEG EMISS ANG 2.26 DEG PHASE ANG 68.36 DEG ALPHA 0.42 DEG	22.22 DEG LONGITUDE 29.33 DEG
			LAT 22.07 DEG			
			LONG 29.35 DEG			
MEDIUM RESOLUTION						
MISSION/ FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
YR.MD.DY	HR.MI.SEC		A LAT 23.82 DEG	AB 104.9 KM	CORNER COORDINATE	SIDE LENGTH
5069	67CE12	125418.13	A LONG 27.58 DEG	BC 86.5 KM	A LAT 22.47 DEG	AB 45.0 KM
			B LAT 23.52 DEG	CD 101.1 KM	A LONG 28.55 DEG	BC 11.3 KM
			B LONG 31.31 DEG	DA 87.1 KM	B LAT 22.34 DEG	CD 44.8 KM
			C LAT 20.68 DEG	TILT DISTANCE 3.0	B LONG 30.15 DEG	DA 11.3 KM
			C LONG 20.57 DEG		C LAT 21.97 DEG	TILT DISTANCE 22.4
			D LAT 20.55 DEG		C LONG 30.11 DEG	
			D LONG 27.41 DEG		D LAT 22.09 DEG	
					D LONG 26.52 DEG	
MEDIUM RESOLUTION						
MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR.MD.DY	HR.MI.SEC		ALT RT 0.1457 KM/SEC	TILT ANG 2.43 DEG	SUN AZIM 97.57 DEG	LATITUDE 22.57 DEG
5069	67CE12	125418.13	ALT 22.39 DEG	TILT AZIM 357.04 DEG SWING ANG 262.43 DEG N.DEV.	INCID ANG 68.81 DEG EMISS ANG 2.61 DEG PHASE ANG 68.36 DEG ALPHA 0.43 DEG	LONGITUDE 29.37 DEG
			LONG 29.38 DEG			
MEDIUM RESOLUTION						
MISSION/ FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
YR.MD.DY	HR.MI.SEC		A LAT 24.18 DEG	AB 104.9 KM	CORNER COORDINATE	SIDE LENGTH
5069	67CE12	125418.13	A LONG 27.59 DEG	BC 87.1 KM	A LAT 22.82 DEG	AB 45.3 KM
			B LAT 23.88 DEG	CD 101.6 KM	A LONG 28.57 DEG	BC 11.3 KM
			B LONG, 31.37 DEG	DA 87.6 KM	B LAT 22.69 DEG	CD 45.1 KM
			C LAT 21.02 DEG	TILT DISTANCE 3.4	B LONG 30.19 DEG	DA 11.4 KM
			C LONG 21.02 DEG		C LAT 22.32 DEG	TILT DISTANCE 25.8
			D LAT 21.29 DEG		C LONG 30.15 DEG	
			D LONG 27.43 DEG		D LAT 22.44 DEG	
					D LONG 26.55 DEG	

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MISSION/
FRAME NO.5070
YR. MO.DY
HR.MI.SEC

TIME

S/C POSITION
ALT RT' 113.14 KM
ALT RT' 0.1102 KM/SEC
LAT 17.1 DEG
LONG 27.13 DEGS/C ORIENTATION
TILT ANG 11.95 DEG
TILT AZIM 263.86 DEG
SWING ANG 189.48 DEG
N.DEV. 86.18 DEGPHOTO ILLUMINATION
SUN AZIM 55.04 DEG
INCID ANG 69.57 DEG
EMISS ANG 12.74 DEG
PHASE ANG 56.99 DEG
ALPHA 12.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 18.53 DEG AB 100.5 KM
A LONG 24.51 DEG BC 73.8 KM
B LAT 18.42 DEG CD 97.6 KM
B LONG 27.57 DEG DA 69.1 KM
C LAT 15.99 DEG TILT DISTANCE 17.1
C LONG 27.74 DEG 28.8
D LAT 15.99 DEG 27.02 DEG
D LONG 24.39 DEG 17.17 DEG
D LONG 25.55 DEG 23.02 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT
LATITUDE 17.30 DEG
LONGITUDE 26.33 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 17.53 DEG AB 42.9 KM
A LONG 25.57 DEG BC 10.1 KM
B LAT 17.41 DEG CD 42.7 KM
B LONG 27.05 DEG DA 10.9 KM
C LAT 17.08 DEG TILT DISTANCE
C LONG 27.02 DEG 28.8
D LAT 17.17 DEG
D LONG 25.55 DEG 23.02 DEGMISSION/
FRAME NO.5071
YR. MO.DY
HR.MI.SEC

TIME

S/C POSITION
ALT 98.27 KM
ALT RT -0.0060 KM/SEC
LAT 0.40 DEG
LONG 24.02 DEGS/C ORIENTATION
TILT ANG 3.42 DEG
TILT AZIM 268.10 DEG
SWING ANG 173.64 DEG
N.DEV. 85.54 DEGPHOTO ILLUMINATION
SUN AZIM 88.61 DEG
INCID ANG 69.96 DEG
EMISS ANG 3.62 DEG
PHASE ANG 66.34 DEG
ALPHA 3.62 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 1.66 DEG AB 80.9 KM
A LONG 22.53 DEG BC 56.5 KM
B LAT 1.40 DEG CD 81.3 KM
B LONG 25.19 DEG DA 70.3 KM
C LAT -0.79 DEG TILT DISTANCE 4.9
C LONG 25.03 DEG 36.4
D LAT -0.65 DEG 0.29 DEG
D LONG 22.35 DEG 23.22 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT
LATITUDE 0.39 DEG
LONGITUDE 23.82 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 0.59 DEG AB 35.5 KM
A LONG 23.24 DEG BC 8.8 KM
B LAT 0.49 DEG CD 35.5 KM
B LONG 24.41 DEG DA 9.0 KM
C LAT 0.20 DEG TILT DISTANCE
C LONG 24.39 DEG 36.4
D LAT 0.29 DEG
D LONG 23.22 DEG

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MISSION/
FRAME NO.

5074 TIME 570812
YR, MO, DY 191015,41
HR, MI, SEC 2221 9.01

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
ALT 98.23 KM ALT RT -0.0007 KM/SEC	TIILT ANG 3.42 DEG TIILT AZIM 280.08 DEG SWING ANG 186.44 DEG N.DEV. 85.59 DEG	SUN AZIM 68.90 DEG INCID ANG 69.87 DEG EMISS ANG 3.61 DEG PHASE ANG 66.34 DEG ALPHA 3.53 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 2.47 DEG A LONG 22.59 DEG	AB 81.3 KM BC 66.6 KM	CORNER COORDINATE A LAT 1.39 DEG A LONG 23.36 DEG
B LAT 2.20 DEG B LONG 25.26 DEG	CD 80.8 KM DA 70.3 KM	B LAT 1.30 DEG B LONG 24.47 DEG
C LAT 0.61 DEG C LONG 25.09 DEG	TIILT DISTANCE 4.9	C LAT 1.01 DEG C LONG 24.45 DEG
D LAT 0.16 DEG D LONG 22.42 DEG		D LAT 1.09 DEG D LONG 23.28 DEG

MISSION/
FRAME NO.

5075 TIME 670812
YR, MO, DY 191015,41
HR, MI, SEC 2221 9.01

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
ALT 98.33 KM ALT RT -0.0055 KM/SEC	TIILT ANG 25.87 DEG TIILT AZIM 95.28 DEG SWING ANG 1.00 DEG N.DEV. 86.39 DEG	SUN AZIM 68.60 DEG INCID ANG 68.30 DEG EMISS ANG 27.46 DEG PHASE ANG 95.59 DEG ALPHA -27.32 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1.54 DEG A LONG 22.56 DEG	AB 108.4 KM BC 97.7 KM	CORNER COORDINATE A LAT 0.59 DEG A LONG 23.20 DEG
B LAT 1.84 DEG B LONG 26.13 DEG	CD 109.4 KM DA 63.3 KM	B LAT 0.51 DEG B LONG 24.69 DEG
C LAT -1.78 DEG C LONG 25.92 DEG	TIILT DISTANCE 38.4	C LAT 0.15 DEG C LONG 24.66 DEG
D LAT -0.53 DEG D LONG 22.40 DEG		D LAT 0.30 DEG D LONG 23.18 DEG

PRINCIPAL POINT
LATITUDE 1.20 DEG
LONGITUDE 23.86 DEG

CORNER COORDINATE	SIDE LENGTH	PRINCIPAL POINT LATITUDE 0.39 DEG LONGITUDE 23.86 DEG
A LAT 1.39 DEG A LONG 23.36 DEG	AB 35.5 KM BC 8.8 KM	CD 35.5 KM
B LAT 1.30 DEG B LONG 24.47 DEG	DA 9.0 KM	C LAT 1.01 DEG C LONG 24.45 DEG
C LAT 1.01 DEG C LONG 24.45 DEG	TIILT DISTANCE 36.3	D LAT 1.09 DEG D LONG 23.28 DEG
D LAT 1.09 DEG D LONG 23.28 DEG		ALPHA -27.32 DEG

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MISSION/

FRAME NO.

5076

TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 98.30 KM	TILT ANG 25.87 DEG	SUN AZIM 88.72 DEG	LATITUDE 0.69 DEG
ALT RT -0.0035 KM/SEC	TILT AZIM 94.71 DEG	INCID ANG 68.27 DEG	LONGITUDE 23.88 DEG
LAT 0.82 DEG	SWING ANG 0 * 36 DEG	EMISS ANG 27.46 DEG	
LONG 22.30 DEG	N.DEV. 86.16 DEG	PHASE ANG 95.59 DEG	
		ALPHA -27.34 DEG	

MISSION/

FRAME NO.

5076

TIME
YR, MO, DY
HR, MI, SEC

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 1.84 DEG	AB 108.7 KM	A LAT 0.89 DEG	A LAT 0.89 DEG	AB 45.1 KM	A LAT 1.18 DEG
A LONG 22.58 DEG	BC 97.7 KM	A LONG 23.22 DEG	BC 11.0 KM	CD 45.1 KM	BC 11.0 KM
B LAT 2.14 DEG	CD 109.1 KM	B LAT 0.80 DEG	CD 45.1 KM		
B LONG 26.16 DEG	DA 63.0 KM	B LONG 24.71 DEG	DA 9.1 KM		
C LAT -1.08 DEG	TILT DISTANCE 38.4	C LAT 0.44 DEG	TILT DISTANCE 95.2		
C LONG 25.53 DEG		C LONG 24.68 DEG			
D LAT -0.24 DEG		D LAT 0.59 DEG			
D LONG 22.43 DEG		D LONG 23.20 DEG			

MISSION/

FRAME NO.

5077

TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 98.29 KM	TILT ANG 25.87 DEG	SUN AZIM 88.84 DEG	LATITUDE 0.98 DEG
ALT RT -0.0016 KM/SEC	TILT AZIM 94.13 DEG	INCID ANG 68.24 DEG	LONGITUDE 23.90 DEG
LAT 1.10 DEG	SWING ANG 359.71 DEG	EMISS ANG 27.46 DEG	
LONG 22.32 DEG	N.DEV. 86.02 DEG	PHASE ANG 95.59 DEG	
		ALPHA -27.37 DEG	

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT 2.13 DEG	AB 109.0 KM	A LAT 1.18 DEG	A LAT 1.18 DEG	AB 45.1 KM	A LAT 1.18 DEG
A LONG 22.61 DEG	BC 97.7 KM	A LONG 23.25 DEG	BC 11.0 KM	CD 45.1 KM	BC 11.0 KM
B LAT 2.44 DEG	CD 108.7 KM	B LAT 1.10 DEG	CD 45.1 KM		
B LONG 26.20 DEG	DA 63.0 KM	B LONG 24.73 DEG	DA 9.1 KM		
C LAT -0.78 DEG	TILT DISTANCE 38.4	C LAT 0.74 DEG	TILT DISTANCE 95.2		
C LONG 25.54 DEG		C LONG 24.70 DEG			
D LAT 0.06 DEG		D LAT 0.89 DEG			
D LONG 22.45 DEG		D LONG 23.22 DEG			

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MISSION/
FRAME NO.5078
YR, MO, DY
HR, MI, SECTIME
67C612
222123.71

S/C POSITION
ALT 98.29 KM
ALT RT 0.005 KM/SEC
LAT 1.39 DEG
LONG 22.35 DEG

S/C ORIENTATION
TILT ANG 25.88 DEG
TILT AZIM 93.53 DEG
SWING ANG 359.05 DEG
N.DEV. 85.88 DEG

INCID ANG 68.21 DEG
EMISS ANG 27.46 DEG
PHASE ANG 95.59 DEG
ALPHA -27.40 DEGMISSION/
FRAME NO.5079
YR, MO, DY
HR, MI, SECTIME
670813
023432.21

S/C POSITION
ALT 1244.88 KM
ALT RT 0.2538 KM/SEC
LAT 37.73 DEG
LONG -163.64 DEG

S/C ORIENTATION
TILT ANG 25.80 DEG
TILT AZIM 281.34 DEG
SWING ANG 89.21 DEG
N.DEV. 3.68 DEG

INCID ANG 79.39 DEG
EMISS ANG 48.37 DEG
PHASE ANG 127.76 DEG
ALPHA -48.37 DEGMISSION/
FRAME NO.5079
YR, MO, DY
HR, MI, SECTIME
670813
023432.21

S/C POSITION
ALT 1244.88 KM
ALT RT 0.2538 KM/SEC
LAT 37.73 DEG
LONG -163.64 DEG

S/C ORIENTATION
TILT ANG 25.80 DEG
TILT AZIM 281.34 DEG
SWING ANG 89.21 DEG
N.DEV. 3.68 DEG

INCID ANG 79.39 DEG
EMISS ANG 48.37 DEG
PHASE ANG 127.76 DEG
ALPHA -48.37 DEGMISSION/
FRAME NO.5079
YR, MO, DY
HR, MI, SECTIME
670813
023432.21

S/C POSITION
ALT 1244.88 KM
ALT RT 0.2538 KM/SEC
LAT 37.73 DEG
LONG -163.64 DEG

S/C ORIENTATION
TILT ANG 25.80 DEG
TILT AZIM 281.34 DEG
SWING ANG 89.21 DEG
N.DEV. 3.68 DEG

INCID ANG 79.39 DEG
EMISS ANG 48.37 DEG
PHASE ANG 127.76 DEG
ALPHA -48.37 DEGMISSION/
FRAME NO.5079
YR, MO, DY
HR, MI, SECTIME
670813
023432.21

S/C POSITION
ALT 1244.88 KM
ALT RT 0.2538 KM/SEC
LAT 37.73 DEG
LONG -163.64 DEG

S/C ORIENTATION
TILT ANG 25.80 DEG
TILT AZIM 281.34 DEG
SWING ANG 89.21 DEG
N.DEV. 3.68 DEG

INCID ANG 79.39 DEG
EMISS ANG 48.37 DEG
PHASE ANG 127.76 DEG
ALPHA -48.37 DEGPHOTO ILLUMINATION
SUN AZIM 88.96 DEG
INCID ANG 68.21 DEG
EMISS ANG 27.46 DEG
PHASE ANG 95.59 DEG
ALPHA -27.40 DEGPHOTO ILLUMINATION
SUN AZIM 263.28 DEG
INCID ANG 79.39 DEG
EMISS ANG 48.37 DEG
PHASE ANG 127.76 DEG
ALPHA -48.37 DEGPHOTO ILLUMINATION
SUN AZIM 263.28 DEG
INCID ANG 79.39 DEG
EMISS ANG 48.37 DEG
PHASE ANG 127.76 DEG
ALPHA -48.37 DEGPHOTO ILLUMINATION
SUN AZIM 263.28 DEG
INCID ANG 79.39 DEG
EMISS ANG 48.37 DEG
PHASE ANG 127.76 DEG
ALPHA -48.37 DEGPHOTO ILLUMINATION
SUN AZIM 263.28 DEG
INCID ANG 79.39 DEG
EMISS ANG 48.37 DEG
PHASE ANG 127.76 DEG
ALPHA -48.37 DEG

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MISSION/
FRAME NO.
5080

TIME
670613
YR, MO, DY

HR, MI, SEC

075455.51

S/C POSITION
ALT 98.31 KM
ALT RT 0.0066 KM/SEC
LAT 2.44 DEG
LONG 17.18 DEG

S/C ORIENTATION
TILT ANG 13.73 DEG
TILT AZIM 96.38 DEG
SWING ANG 1.73 DEG
N.DEV. 85.52 DEG

PHOTO ILLUMINATION
SUN AZIM 89.35 DEG
INCID ANG 69.29 DEG
EWSS ANG 14.52 DEG
PHASE ANG 83.71 DEG
ALPHA -14.43 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 3.51 DEG AB 87.1 KM
A LONG 16.77 DEG BC 78.8 KM
B LAT 3.52 DEG CD 87.6 KM
B LONG 19.65 DEG DA 63.7 KM
C LAT C.53 DEG TILT DISTANCE 19.3
C LONG 15.45 DEG
D LAT 1.41 DEG
D LONG 16.60 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	2.54 DEG
A LONG	17.39 DEG
B LAT	2.45 DEG
B LONG	18.63 DEG
C LAT	2.14 DEG
C LONG	18.61 DEG
D LAT	2.26 DEG
D LONG	17.36 DEG

MISSION/
FRAME NO.
5081

TIME
670613
YR, MO, DY

HR, MI, SEC

0755 C.01

S/C POSITION
ALT 98.35 KM
ALT RT 0.0084 KM/SEC
LAT 2.70 DEG
LONG 17.20 DEG

S/C ORIENTATION
TILT ANG 13.72 DEG
TILT AZIM 95.32 DEG
SWING ANG 0.63 DEG
N.DEN. 85.45 DEG

PHOTO ILLUMINATION
SUN AZIM 89.45 DEG
INCID ANG 69.26 DEG
EWSS ANG 14.52 DEG
PHASE ANG 83.71 DEG
ALPHA -14.45 DEG

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	2.54 DEG
A LONG	17.39 DEG
B LAT	2.45 DEG
B LONG	18.63 DEG
C LAT	2.14 DEG
C LONG	18.61 DEG
D LAT	2.26 DEG
D LONG	17.36 DEG

PRINCIPAL POINT
LATITUDE 2.35 DEG
LONGITUDE 17.97 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT	2.54 DEG
A LONG	17.39 DEG
B LAT	2.45 DEG
B LONG	18.63 DEG
C LAT	2.14 DEG
C LONG	18.61 DEG
D LAT	2.26 DEG
D LONG	17.36 DEG

PRINCIPAL POINT
LATITUDE 2.62 DEG
LONGITUDE 17.99 DEG

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MISSION/
 FRAME NO.

5082 TIME 67CE813 S/C POSITION ALT 98.39 KM TILT ANG 13.72 DEG PRINCIPAL ILLUMINATION SUN AZIM 89.56 DEG LAT 0.0102 KM/SEC TILT AZIM 94.26 DEG POINT INCID ANG 69.24 DEG LONG 2.96 DEG SWING ANG 359.54 DEG EMIS ANG 14.52 DEG N.DEV. 17.22 DEG PHASE ANG 83.71 DEG ALPHA -14.47 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 4.06 DEG AB 87.5 KM
 A LONG 16.81 DEG BC 78.9 KM
 B LAT 4.07 DEG CD 87.3 KM
 B LONG 15.71 DEG DA 63.7 KM
 C LAT 1.48 DEG TILT DISTANCE
 C LONG 19.49 DEG 19.2
 D LAT 1.56 DEG
 D LONG 16.65 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 3.09 DEG AB 37.8 KM
 A LONG 17.43 DEG BC 9.6 KM
 B LAT 3.00 DEG CD 37.8 KM
 B LONG 18.68 DEG DA 8.8 KM
 C LAT 2.58 DEG TILT DISTANCE
 C LONG 18.65 DEG 48.6
 D LAT 2.80 DEG
 D LONG 17.41 DEG

MISSION/
 FRAME NO.

5083 TIME 67GE813 S/C POSITION ALT 98.44 KM TILT ANG 13.73 DEG PRINCIPAL ILLUMINATION SUN AZIM 89.66 DEG LAT 0.0121 KM/SEC TILT AZIM 93.19 DEG POINT INCID ANG 69.21 DEG LONG 3.22 DEG SWING ANG 358.44 DEG EMIS ANG 14.52 DEG N.DEV. 17.24 DEG PHASE ANG 83.71 DEG ALPHA -14.50 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 4.33 DEG AB 87.7 KM
 A LONG 16.84 DEG BC 78.9 KM
 B LAT 4.35 DEG CD 87.2 KM
 B LONG 15.74 DEG DA 63.7 KM
 C LAT 1.76 DEG TILT DISTANCE
 C LONG 15.51 DEG 19.3
 D LAT 2.24 DEG
 D LONG 16.67 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 3.36 DEG AB 37.9 KM
 A LONG 17.45 DEG BC 9.6 KM
 B LAT 3.27 DEG CD 37.8 KM
 B LONG 18.70 DEG DA 8.8 KM
 C LAT 2.96 DEG TILT DISTANCE
 C LONG 18.67 DEG 48.6
 D LAT 3.08 DEG
 D LONG 17.43 DEG

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MESSAGE /

FRAME NO.
5084 YR. HQ
H.R. HI

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION
ALT 1114.82 KM	TILT ANG 2.44 DEG	SUN AZIM 83.70 DEG
ALT RT -0.1134 KM/SEC	TILT AZIM 220.64 DEG	INCID ANG 72.83 DEG
LAT -14.82 DEG	SWING ANG 125.96 DEG	EMISS ANG 2.60 DEG
LONG 14.82 DEG	N.DEV. 85.26 DEG	PHASE ANG 70.94 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	-13°49 DEG	AB 93.3
A LONG	12°42 DEG	BC 79.0
B LAT	-13°49 DEG	CD 95.7
B LONG	15°57 DEG	DA 81.9
C LAT	-16°38 DEG	TILT DIST
C LONG	15°41 DEG	3.4
D LAT	-16°15 DEG	
D LONG	12°13 DEG	

HIGH RESOLUTION		SIDE L
CORNER	COORDINATE	
A LAT	-14°.72 DEG	AB 4
A LONG	13°.72 DEG	BC 10
B LAT	-14°.83 DEG	CD 41
B LONG	14°.63 DEG	DA 10
C LAT	-15°.17 DEG	TILT C
C LONG	14°.60 DEG	25
D LAT	-15°.06 DEG	
D LONG	13°.19 DEG	

PRINCIPAL POINT
LATITUDE -16° 95' DEG
LONGITUDE 13° 91' DEG

LENGHT
41.3 KH
10.4 KH
41.5 KH
10.5 KH
DISTANCE
25.9

• 5085

PRINCIPAL POINT
LATITUDE 38°.73 DEG
LONGITUDE 158°.84 DEG

MEDIUM RESOLUTION		SIDE LENGTH	ANGLE
CORNER COORDINATE			
A LAT	-55.63 DEG	AB 426.9 KM	175.0
A LONG	-175.34 DEG	BC 431.3 KM	175.0
B LAT	21.55 DEG	CD 599.7 KM	175.0
B LONG	178.29 DEG	DA 340.4 KM	175.0
C LAT	9.23 DEG	TILT DISTANCE	175.0
C LONG	148.57 DEG		175.0
D LAT	61.40 DEG		175.0
D LONG	125.89 DEG		175.0

HIGH RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	47.76 DEG	AB 533.2 KM
A LONG	161.18 DEG	BC 228.0 KM
B LAT	30.13 DEG	CD 595.9 KM
B LONG	162.77 DEG	DA 225.6 KM
C LAT	28.22 DEG	TI LT DISTAN
C LONG	154.42 DEG	94.7
D LAT	47.70 DEG	
D LONG	150.10 DEG	

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MISSION/
FRAME NO.5086 TIME 670813 S/C POSITION ALT 178.15 KM
YR, MO, DY HR, MI, SEC 204542.31 ALT RT 0.2353 KM/SEC
LAT 37.70 DEG SWING ANG 268.47 DEG
LONG 13.43 DEG NDEV. 84.29 DEG PHASE ANG 70.83 DEG
ALPHA .. 0.48 DEGS/C ORIENTATION TILT ANG 3.13 DEG
TILT AZIM 4.16 DEG
EMISS ANG 3.45 DEG
PHASE ANG 70.83 DEG
LATITUDE 38.02 DEG
LONGITUDE 13.46 DEGMISSION RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 40.35 DEG AB 150.8 KM
A LONG 10.46 DEG BC 124.9 KM
B LAT 39.84 DEG CD 144.4 KM
B LONG 16.93 DEG DA 125.4 KM
C LAT 35.76 DEG TILT DISTANCE 4.4
C LONG 16.12 DEG
D LAT 36.21 DEG
D LONG 10.25 DEGPHOTO ILLUMINATION
SUN AZIM 103.32 DEG
INCID ANG 71.34 DEG
EMISS ANG 3.45 DEG
PHASE ANG 70.83 DEG
ALPHA .. 0.48 DEGPRINCIPAL POINT
LATITUDE 38.02 DEG
LONGITUDE 13.46 DEGMISSION/
FRAME NO.
5087 TIME 670813 S/C POSITION ALT 180.14 KM
YR, MO, DY HR, MI, SEC 204550.71 ALT RT 0.2378 KM/SEC
LAT 38.14 DEG SWING ANG 268.67 DEG
LONG 13.49 DEG NDEV. 84.24 DEG PHASE ANG 70.83 DEG
ALPHA .. 0.53 DEGS/C ORIENTATION TILT ANG 3.58 DEG
TILT AZIM 4.40 DEG
EMISS ANG 3.95 DEG
PHASE ANG 70.83 DEG
LATITUDE 38.51 DEG
LONGITUDE 13.52 DEGPRINCIPAL POINT
LATITUDE 38.51 DEG
LONGITUDE 13.52 DEGMISSION RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 40.88 DEG AB 153.0 KM
A LONG 10.46 DEG BC 126.5 KM
B LAT 40.35 DEG CD 145.6 KM
B LONG 17.08 DEG DA 126.9 KM
C LAT 36.23 DEG TILT DISTANCE 5.0
C LONG 16.22 DEG
D LAT 36.69 DEG
D LONG 10.27 DEGPHOTO ILLUMINATION
SUN AZIM 103.52 DEG
INCID ANG 71.41 DEG
EMISS ANG 3.95 DEG
PHASE ANG 70.83 DEG
ALPHA .. 0.53 DEGPRINCIPAL POINT
LATITUDE 38.51 DEG
LONGITUDE 13.52 DEGMISSION RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 38.88 DEG AB 65.3 KM
A LONG 12.18 DEG BC 16.4 KM
B LAT 38.66 DEG CD 64.9 KM
B LONG 14.93 DEG DA 16.4 KM
C LAT 38.13 DEG TILT DISTANCE 38.0
C LONG 14.84 DEG
D LAT 38.34 DEG
D LONG 12.13 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 38.38 DEG AB 64.5 KM
A LONG 12.14 DEG BC 16.2 KM
B LAT 38.17 DEG CD 64.1 KM
B LONG 14.84 DEG DA 16.2 KM
C LAT 37.64 DEG TILT DISTANCE 33.2
C LONG 14.76 DEG
D LAT 37.85 DEG
D LONG 12.09 DEGHIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT 38.88 DEG AB 65.3 KM
A LONG 12.18 DEG BC 16.4 KM
B LAT 38.66 DEG CD 64.9 KM
B LONG 14.93 DEG DA 16.4 KM
C LAT 38.13 DEG TILT DISTANCE 38.0
C LONG 14.84 DEG
D LAT 38.34 DEG
D LONG 12.13 DEG

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MISSION / FRAME NO.				TIME				S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT											
5088	YR. MO. DY	670813	HR. MI. SEC	204559.21	ALT	162.17	KM	ALT	RT	0.45	KM/SEC	TILT AZIM	4.02	DEG	SUN AZIM	103.73	DEG	LATITUDE	39.01	DEG	INCID ANG	71.48	DEG	LONGITUDE	13.59	DEG					
					LAT	38.59	DEG					SWING ANG	.268.04	DEG	EMISS ANG	4.45	DEG					PHASE ANG	70.83	DEG							
					LONG	13.55	DEG					N.DEV.	84.20	DEG	ALPHA	0.59	DEG														
HIGH RESOLUTION																															
MISSION / FRAME NO.				TIME				S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT											
5089	YR. MO. DY	670813	HR. MI. SEC	2050 7.81	ALT	184.25	KM	ALT	RT	0.2429	KM/SEC	TILT AZIM	4.48	DEG	SUN AZIM	103.94	DEG	LATITUDE	39.51	DEG	INCID ANG	71.55	DEG	LONGITUDE	13.66	DEG					
					LAT	39.04	DEG					SWING ANG	.268.97	DEG	EMISS ANG	4.95	DEG					PHASE ANG	70.83	DEG							
					LONG	13.60	DEG					N.DEV.	84.15	DEG	ALPHA	0.65	DEG														
HIGH RESOLUTION																															
MISSION / FRAME NO.				TIME				S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT											
5089	YR. MO. DY	670813	HR. MI. SEC	2050 7.81	ALT	157.8	KM	ALT	RT	0.2429	KM/SEC	TILT AZIM	4.76	DEG	SUN AZIM	103.94	DEG	LATITUDE	39.51	DEG	INCID ANG	71.55	DEG	LONGITUDE	13.66	DEG					
					LAT	39.04	DEG					SWING ANG	.268.97	DEG	EMISS ANG	4.95	DEG					PHASE ANG	70.83	DEG							
					LONG	13.60	DEG					N.DEV.	84.15	DEG	ALPHA	0.65	DEG														
HIGH RESOLUTION																															
MISSION / FRAME NO.				TIME				S/C POSITION				S/C ORIENTATION				PHOTO ILLUMINATION				PRINCIPAL POINT											
5089	YR. MO. DY	670813	HR. MI. SEC	2050 7.81	A LAT	41.56	DEG	AB	157.8	KM	A LONG	10.45	DEG	BC	129.9	KM	B LAT	39.04	DEG	C LAT	14.41	DEG	D LAT	17.39	DEG	E LAT	37.19	DEG			
					A LONG	41.41	DEG	CD	148.3	KM	B LONG	16.43	DEG	DA	130.3	KM	C LONG	16.43	DEG	D LONG	27.66	DEG	E LONG	10.30	DEG	F LAT	39.04	DEG	G LONG	12.21	DEG
					B LAT	41.41	DEG	DA	130.3	KM	B LONG	17.39	DEG	E LAT	37.19	DEG	C LONG	16.43	DEG	D LONG	27.66	DEG	E LONG	10.30	DEG	F LAT	39.04	DEG	G LONG	12.21	DEG
					C LAT	41.41	DEG	DA	130.3	KM	C LONG	16.43	DEG	D LAT	27.66	DEG	E LONG	10.30	DEG	F LAT	39.04	DEG	G LONG	12.21	DEG	H LAT	39.04	DEG	I LONG	12.21	DEG
					D LAT	41.41	DEG	DA	130.3	KM	D LONG	27.66	DEG	E LAT	37.19	DEG	F LONG	16.43	DEG	G LAT	10.30	DEG	H LONG	12.21	DEG	I LAT	39.04	DEG	J LONG	12.21	DEG
					E LAT	41.41	DEG	DA	130.3	KM	E LONG	27.66	DEG	F LAT	37.19	DEG	G LONG	16.43	DEG	H LAT	10.30	DEG	I LONG	12.21	DEG	J LAT	39.04	DEG	K LONG	12.21	DEG
					F LAT	41.41	DEG	DA	130.3	KM	F LONG	27.66	DEG	G LAT	37.19	DEG	H LONG	16.43	DEG	I LAT	10.30	DEG	J LONG	12.21	DEG	K LAT	39.04	DEG	L LONG	12.21	DEG
					G LAT	41.41	DEG	DA	130.3	KM	G LONG	27.66	DEG	H LAT	37.19	DEG	I LONG	16.43	DEG	J LAT	10.30	DEG	K LONG	12.21	DEG	L LAT	39.04	DEG	M LONG	12.21	DEG
					H LAT	41.41	DEG	DA	130.3	KM	H LONG	27.66	DEG	I LAT	37.19	DEG	J LONG	16.43	DEG	K LAT	10.30	DEG	L LONG	12.21	DEG	M LAT	39.04	DEG	N LONG	12.21	DEG
					I LAT	41.41	DEG	DA	130.3	KM	I LONG	27.66	DEG	J LAT	37.19	DEG	K LONG	16.43	DEG	L LAT	10.30	DEG	M LONG	12.21	DEG	N LAT	39.04	DEG	O LONG	12.21	DEG
					J LAT	41.41	DEG	DA	130.3	KM	J LONG	27.66	DEG	K LAT	37.19	DEG	L LONG	16.43	DEG	M LAT	10.30	DEG	N LONG	12.21	DEG	O LAT	39.04	DEG	P LONG	12.21	DEG
					K LAT	41.41	DEG	DA	130.3	KM	K LONG	27.66	DEG	L LAT	37.19	DEG	M LONG	16.43	DEG	N LAT	10.30	DEG	O LONG	12.21	DEG	P LAT	39.04	DEG	Q LONG	12.21	DEG
					L LAT	41.41	DEG	DA	130.3	KM	L LONG	27.66	DEG	M LAT	37.19	DEG	N LONG	16.43	DEG	O LAT	10.30	DEG	P LONG	12.21	DEG	Q LAT	39.04	DEG	R LONG	12.21	DEG
					M LAT	41.41	DEG	DA	130.3	KM	M LONG	27.66	DEG	N LAT	37.19	DEG	O LONG	16.43	DEG	P LAT	10.30	DEG	Q LONG	12.21	DEG	R LAT	39.04	DEG	S LONG	12.21	DEG
					N LAT	41.41	DEG	DA	130.3	KM	N LONG	27.66	DEG	O LAT	37.19	DEG	P LONG	16.43	DEG	Q LAT	10.30	DEG	R LONG	12.21	DEG	S LAT	39.04	DEG	T LONG	12.21	DEG
					O LAT	41.41	DEG	DA	130.3	KM	O LONG	27.66	DEG	P LAT	37.19	DEG	Q LONG	16.43	DEG	R LAT	10.30	DEG	S LONG	12.21	DEG	T LAT	39.04	DEG	U LONG	12.21	DEG
					P LAT	41.41	DEG	DA	130.3	KM	P LONG	27.66	DEG	Q LAT	37.19	DEG	R LONG	16.43	DEG	S LAT	10.30	DEG	T LONG	12.21	DEG	U LAT	39.04	DEG	V LONG	12.21	DEG
					Q LAT	41.41	DEG	DA	130.3	KM	Q LONG	27.66	DEG	R LAT	37.19	DEG	S LONG	16.43	DEG	T LAT	10.30	DEG	U LONG	12.21	DEG	V LAT	39.04	DEG	W LONG	12.21	DEG
					R LAT	41.41	DEG	DA	130.3	KM	R LONG	27.66	DEG	S LAT	37.19	DEG	T LONG	16.43	DEG	U LAT	10.30	DEG	V LONG	12.21	DEG	W LAT	39.04	DEG	X LONG	12.21	DEG
					S LAT	41.41	DEG	DA	130.3	KM	S LONG	27.66	DEG	T LAT	37.19	DEG	U LONG	16.43	DEG	V LAT	10.30	DEG	W LONG	12.21	DEG	X LAT	39.04	DEG	Y LONG	12.21	DEG
					T LAT	41.41	DEG	DA	130.3	KM	T LONG	27.66	DEG	U LAT	37.19	DEG	V LONG	16.43	DEG	W LAT	10.30	DEG	X LONG	12.21	DEG	Y LAT	39.04	DEG	Z LONG	12.21	DEG
					U LAT	41.41	DEG	DA	130.3	KM	U LONG	27.66	DEG	V LAT	37.19	DEG	W LONG	16.43	DEG	X LAT	10.30	DEG	Y LONG	12.21	DEG	Z LAT	39.04	DEG			

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MISSION/
FRAME NO.YR.MD.DY
HR.MI.SEC

TIME

S/C POSITION
ALT RT 0.1263 KM/SEC
LAT 20.19 DEG
LONG 9.88 DEGS/C ORIENTATION
TILT ANG 9.12 DEG
TILT AZIM 282.37 DEG
SWING ANG 187.76 DEG
N.DEV. 85.79 DEGPHOTO ILLUMINATION
SUN AZIM 95.81 DEG
INCID ANG 70.71 DEG
EMISS ANG 9.76 DEG
PHASE ANG 61.01 DEG
ALPHA 9.69 DEGPRINCIPAL POINT
LATITUDE 20.32 DEG
LONGITUDE 9.22 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 21.58 DEG AB 102.9 KM
A LONG 7.36 DEG BC 78.7 KM
B LAT 21.51 DEG CD 101.1 KM
B LONG 10.58 DEG DA 91.0 KM
C LAT 18.92 DEG TILT DISTANCE 13.0
C LONG 16.73 DEG
D LAT 18.98 DEG
D LONG 7.20 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 20.57 DEG AB 44.4 KM
A LONG 8.43 DEG BC 10.6 KM
B LAT 20.44 DEG CD 44.3 KM
B LONG 9.98 DEG DA 11.3 KM
C LAT 20.09 DEG TILT DISTANCE 97.7
C LONG 9.95 DEG
D LAT 20.19 DEG
D LONG 8.40 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 120.21 KM
A LONG 0.1284 KM/SEC
LAT 20.50 DEG
LONG 9.90 DEGS/C ORIENTATION
TILT ANG 9.17 DEG

TILT AZIM 284.29 DEG

SWING ANG 189.69 DEG

N.DEV. 85.84 DEG

PHASE ANG 61.01 DEG

ALPHA 9.70 DEG

PHOTO ILLUMINATION
SUN AZIM 95.94 DEG
INCID ANG 70.72 DEG
EMISS ANG 9.81 DEG
PHASE ANG 61.01 DEG
ALPHAPRINCIPAL POINT
LATITUDE 20.65 DEG
LONGITUDE 9.24 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 22.32 DEG AB 103.7 KM
A LONG 7.37 DEG BC 79.2 KM
B LAT 21.85 DEG CD 101.5 KM
B LONG 11.03 DEG DA 91.5 KM
C LAT 15.25 DEG TILT DISTANCE 13.0
C LONG 10.76 DEG
D LAT 19.30 DEG
D LONG 7.21 DEGS/C ORIENTATION
TILT ANG 9.17 DEG

TILT AZIM 284.29 DEG

SWING ANG 189.69 DEG

N.DEV. 85.84 DEG

PHASE ANG 61.01 DEG

ALPHA 9.70 DEG

PHOTO ILLUMINATION
SUN AZIM 95.94 DEG
INCID ANG 70.72 DEG
EMISS ANG 9.81 DEG
PHASE ANG 61.01 DEG
ALPHAPRINCIPAL POINT
LATITUDE 20.65 DEG
LONGITUDE 9.24 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 20.90 DEG AB 44.6 KM
A LONG 8.44 DEG BC 10.7 KM
B LAT 20.77 DEG CD 44.5 KM
B LONG 10.01 DEG DA 11.4 KM
C LAT 20.42 DEG TILT DISTANCE 98.2
C LONG 9.98 DEG
D LAT 20.52 DEG
D LONG 8.42 DEG

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MISSION/

FRAME NO.*

5092

YR. MO. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	670813	120° 94' KM	TILT ANG 9° 23'	SUN AZIM 96° 07' DEG	LATITUDE 20° 99' DEG
ALT RT	235536.51	0.1305 KM/SEC	TIILT AZIM 286° 22'	INCID ANG 70° 73' DEG	LONGITUDE 9° 26' DEG
LAT		20° 81' DEG	SWING ANG 191° 54'	EMISS ANG 9° 88' DEG	
LONG		9° 93' DEG	N.DEV.	PHASE ANG 61° 01' DEG	
				ALPHA 9° 71' DEG	

MISSION/

FRAME NO.*

5093

YR. MO. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	670813	121° 68' KM	TILT ANG 9° 29'	SUN AZIM 96° 19' DEG	LATITUDE 21° 33' DEG
ALT RT	235532.21	0.1326 KM/SEC	TIILT AZIM 288° 15'	INCID ANG 70° 74' DEG	LONGITUDE 9° 29' DEG
LAT		21° 13' DEG	SWING ANG 193° 59'	EMISS ANG 9° 95' DEG	
LONG		9° 96' DEG	N.DEV.	PHASE ANG 61° 01' DEG	
				ALPHA 9° 72' DEG	

MISSION/

FRAME NO.*

5093

YR. MO. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	670813	105° 6' KM	TILT ANG 9° 29'	SUN AZIM 96° 19' DEG	LATITUDE 21° 33' DEG
ALT RT	235532.21	0.1326 KM/SEC	TIILT AZIM 288° 15'	INCID ANG 70° 74' DEG	LONGITUDE 9° 29' DEG
LAT		102° 3' KM	SWING ANG 193° 59'	EMISS ANG 9° 95' DEG	
LONG		92° 8' KM	N.DEV.	PHASE ANG 61° 01' DEG	
				ALPHA 9° 72' DEG	

MISSION/

FRAME NO.*

5093

YR. MO. DY
HR. MI. SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	670813	105° 6' KM	TILT ANG 9° 29'	SUN AZIM 96° 19' DEG	LATITUDE 21° 33' DEG
ALT RT	235532.21	0.1326 KM/SEC	TIILT AZIM 288° 15'	INCID ANG 70° 74' DEG	LONGITUDE 9° 29' DEG
LAT		102° 3' KM	SWING ANG 193° 59'	EMISS ANG 9° 95' DEG	
LONG		92° 8' KM	N.DEV.	PHASE ANG 61° 01' DEG	
				ALPHA 9° 72' DEG	

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MISSION/
FRAME NO.

5094 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
YR, MO, DY ALT RT 99.76 KM TILT ANG 19.11 DEG SUN AZIM 90.93 DEG LATITUDE 7.36 DEG
HR, MI, SEC 030241.62 ALT RT 0.0376 KM/SEC TILT AZIM 274.76 DEG INCID ANG 71.63 DEG LONGITUDE 5.90 DEG
LAT 7.26 DEG SWING ANG 180.27 DEG EMIS ANG 20.25 DEG
LONG 7.05 DEG N.DEV. 85.94 DEG PHASE ANG 51.43 DEG
ALPHA 20.19 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 8.94 DEG	AB 96.4 KM	A LAT 7.58 DEG	AB 40.9 KM	
A LONG 4.14 DEG	BC 53.9 KM	A LONG 5.19 DEG	BC 9.0 KM	
B LAT 8.32 DEG	CD 96.2 KM	B LAT 7.46 DEG	CD 40.9 KM	
B LONG 7.30 DEG	DA 87.3 KM	B LONG 6.54 DEG	DA 10.3 KM	
C LAT 6.21 DEG	TILT DISTANCE	C LAT 7.16 DEG	TILT DISTANCE	
C LONG 7.13 DEG	27.8	C LONG 6.52 DEG	10.8	
D LAT 6.47 DEG		D LAT 7.24 DEG		
D LONG 3.94 DEG		D LONG 5.16 DEG		

MISSION/
FRAME NO.

5095 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
YR, MO, DY ALT RT 99.94 KM TILT ANG 19.11 DEG SUN AZIM 91.03 DEG LATITUDE 7.65 DEG
HR, MI, SEC 030246.38 ALT RT 0.0396 KM/SEC TILT AZIM 275.55 DEG INCID ANG 71.62 DEG LONGITUDE 5.92 DEG
LAT 7.54 DEG SWING ANG 181.11 DEG EMIS ANG 20.25 DEG
LONG 7.07 DEG N.DEV. 86.04 DEG PHASE ANG 51.43 DEG
ALPHA 20.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 9.23 DEG	AB 96.8 KM	A LAT 7.67 DEG	AB 41.0 KM	
A LONG 4.15 DEG	BC 64.0 KM	A LONG 5.20 DEG	BC 9.0 KM	
B LAT 8.61 DEG	CD 96.2 KM	B LAT 7.75 DEG	CD 40.9 KM	
B LONG 7.32 DEG	DA 87.5 KM	B LONG 6.56 DEG	DA 10.3 KM	
C LAT 6.50 DEG	TILT DISTANCE	C LAT 7.45 DEG	TILT DISTANCE	
C LONG 7.15 DEG	27.8	C LONG 6.54 DEG	10.8	
D LAT 6.36 DEG		D LAT 7.53 DEG		
D LONG 3.97 DEG		D LONG 5.18 DEG		



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MISSION

MEDIUM RESOLUTION		SIDE LE
CORNER-COORDINATE		
A LAT	9°53' DEG	AB 97°
A LONG	4°16' DEG	BC 64°
B LAT	8°59' DEG	CD 96°
B LONG	7°35' DEG	DA 87°
C LAT	6°59' DEG	TILT DI
C LONG	7°18' DEG	27°
D LAT	6°54' DEG	
D LONG	3°59' DEG	

MISSION /
FRAME NO. *

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION POINT
YR, MO, DY	670814	ALT 100.33 KM ALT RT 0.0434 KM/SEC	ALT ANG 19.12 DEG TILT AZIM 277.14 DEG SWING ANG 182.78 DEG N-DEV.	SUN AZIM 91.23 DEG INCID ANG 71.59 DEG EMISS ANG 20.28 DEG PHASE ANG 51.43 DEG ALPHA 20.14 DEG
HR, MI, SEC	030255.90	LAT 8.08 DEG LONG 7.11 DEG		LATITUDE 8.22 DEG LONGITUDE 5.96 DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	6°-83 DEG	AB 97.7 KM
A LONG	4°-17 DEG	BC 64.3 KM
B LAT	5°-19 DEG	CD 96.1 KM
B LONG	7°-37 DEG	DA 87.9 KM
C LAT	7°-08 DEG	TI LT DISTANCE
C LONG	7°-20 DEG	27.9
D LAT	6°-93 DEG	
D LONG	4°-01 DEG	

HIGH RESOLUTION		SIDE LENGTH	
CORNER	COORDINATE		
A LAT	8.45 DEG	AB	41.2 KM
A LONG	5.24 DEG	BC	9.0 KM
B LAT	8.32 DEG	CD	41.1 KM
B LONG	6.00 DEG	DA	10.3 KM
C LAT	8.03 DEG		
C LONG	6.58 DEG		
D LAT	8.11 DEG		
D LONG	5.22 DEG		

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S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG 19°.11 DEG	SUN AZIM 91°.13 DEG	LATITUDE 7°.93 DEG
TILT AZIM 276°.34 DEG	INCID ANG 71°.60 DEG	LONGITUDE 5°.94 DEG
SWING ANG 181°.94 DEG	EMISS ANG 20°.26 DEG	
N.DEV. 86°.14 DEG	PHASE ANG 51°.43 DEG	
	ALPHA 20°.16 DEG	

HIGH RESOLUTION		SIDE	
CORNER	COORDINATE		
A LAT	8.16 DEG	AB	4
A LONG	5.22 DEG	BC	
B LAT	6.03 DEG	CD	4
B LONG	6.58 DEG	DA	1
C LAT	7.74 DEG	TILT	
C LONG	6.56 DEG		1
D LAT	7.82 DEG		
D LONG	5.20 DEG		

PHOTO ILLUMINATION	PRINCIPAL POINT
SUN AZIM	91° 23 DEG
INCID ANG	71° 59 DEG
EMISS ANG	20° 28 DEG
PHASE ANG	51° 43 DEG
ALPHA	20° 14 DEG

'HIGH RESOLUTION'		SIDE
CORNER	COORDINATE	
A LAT	B.*45 DEG	AB
A LONG	5.*24 DEG	BC
B LAT	8.*32 DEG	CD
B LONG	6.*60 DEG	DA
C LAT	8.*03 DEG	TIL
C LONG	6.*58 DEG	
D LAT	8.*11 DEG	
D LONG	5.*22 DEG	

LENGTH	DISTANCE
41.2 KM	11.0
9.0 KM	
41.1 KM	
10.3 KM	

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MISSION/
FRAME NO.

5098

YR, MO, DY
HR, MI, SEC670814
061011.71

TIME

S/C POSITION

ALT	100°50' KM	S/C ORIENTATION	TILT ANG 5°20' DEG	PHOTO ILLUMINATION	SUN AZIM 86°87' DEG	PRINCIPAL POINT	LATITUDE -5°01' DEG
ALT RT	-0.0482 KM/SEC	TILT AZIM 263°51' DEG	INCID ANG 72°16' DEG	EMISS ANG 5°50' DEG	LONGITUDE 4°02' DEG		
LAT	-4°47' DEG	SWING ANG 169°23' DEG	PHASE ANG 66°67' DEG				
LONG	4°32' DEG	NDEV.	ALPHA 5°49' DEG				

MISSION/
FRAME NO.

5099

YR, MO, DY
HR, MI, SEC670814
061016.30

TIME

S/C POSITION

ALT	100°29' KM	S/C ORIENTATION	TILT ANG 5°15' DEG	PHOTO ILLUMINATION	SUN AZIM 86°95' DEG	PRINCIPAL POINT	LATITUDE -4°73' DEG
ALT RT	-0.0463 KM/SEC	TILT AZIM 266°38' DEG	INCID ANG 72°12' DEG	EMISS ANG 5°45' DEG	LONGITUDE 4°04' DEG		
LAT	-4°47' DEG	SWING ANG 172°11' DEG	PHASE ANG 66°67' DEG				
LONG	4°34' DEG	NDEV.	ALPHA 5°45' DEG				

MISSION/
FRAME NO.

5099

YR, MO, DY
HR, MI, SEC670814
061016.30

TIME

S/C POSITION

ALT	100°29' KM	S/C ORIENTATION	TILT ANG 5°15' DEG	PHOTO ILLUMINATION	SUN AZIM 86°95' DEG	PRINCIPAL POINT	LATITUDE -4°73' DEG
ALT RT	-0.0463 KM/SEC	TILT AZIM 266°38' DEG	INCID ANG 72°12' DEG	EMISS ANG 5°45' DEG	LONGITUDE 4°04' DEG		
LAT	-4°47' DEG	SWING ANG 172°11' DEG	PHASE ANG 66°67' DEG				
LONG	4°34' DEG	NDEV.	ALPHA 5°45' DEG				

MISSION/
FRAME NO.

5099

YR, MO, DY
HR, MI, SEC670814
061016.30

TIME

S/C POSITION

ALT	100°29' KM	S/C ORIENTATION	TILT ANG 5°15' DEG	PHOTO ILLUMINATION	SUN AZIM 86°95' DEG	PRINCIPAL POINT	LATITUDE -4°73' DEG
ALT RT	-0.0463 KM/SEC	TILT AZIM 266°38' DEG	INCID ANG 72°12' DEG	EMISS ANG 5°45' DEG	LONGITUDE 4°04' DEG		
LAT	-4°47' DEG	SWING ANG 172°11' DEG	PHASE ANG 66°67' DEG				
LONG	4°34' DEG	NDEV.	ALPHA 5°45' DEG				

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -3°70' DEG	AB 93.0 KM	A LAT -4°81' DEG	AB 36.5 KM
A LONG 2°48' DEG	BC 67°4' KM	A LONG 3°42' DEG	BC 9.0 KM
B LAT -3°99' DEG	CD 84.0 KM	B LAT -4°90' DEG	CD 36.5 KM
B LONG 5°41' DEG	DA 73°1' KM	B LONG 4°62' DEG	DA 9.3 KM
C LAT -6°21' DEG	TILT DISTANCE 7°4'	C LAT -5°20' DEG	TILT DISTANCE 55°3'
C LONG 5°26' DEG		C LONG 4°60' DEG	
D LAT -6°10' DEG		D LAT -5°12' DEG	
D LONG 2°47' DEG		D LONG 3°40' DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -3°70' DEG	AB 93.0 KM	A LAT -4°81' DEG	AB 36.5 KM
A LONG 2°48' DEG	BC 67°4' KM	A LONG 3°42' DEG	BC 9.0 KM
B LAT -3°99' DEG	CD 84.0 KM	B LAT -4°90' DEG	CD 36.5 KM
B LONG 5°41' DEG	DA 73°1' KM	B LONG 4°62' DEG	DA 9.3 KM
C LAT -6°21' DEG	TILT DISTANCE 7°4'	C LAT -5°20' DEG	TILT DISTANCE 55°3'
C LONG 5°26' DEG		C LONG 4°60' DEG	
D LAT -6°10' DEG		D LAT -5°12' DEG	
D LONG 2°47' DEG		D LONG 3°40' DEG	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION

5190		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
YR, MO, DY	670514	ALT	100.06 KM	TILT ANG 5.12 DEG	SUN AZIM 87.04 DEG	LATITUDE -4.46 DEG
HR, MI, SEC	061020.83	ALT RT	-0.0445 KM/SEC	TIKT AZIM 269.25 DEG	INCID ANG 72.08 DEG	LONGITUDE 4.07 DEG
		LAT	-4.45 DEG	SWING ANG 175.00 DEG	EMISS ANG 5.42 DEG	
		LONG	4.36 DEG	N.DEV. 85.12 DEG	PHASE ANG 66.67 DEG	
					ALPHA 5.41 DEG	

HEDGING RESOLUTION

CCORNER	COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT	-3°15' DEG	AB 82.9 KM	A LAT	-4°26' DEG
A LONG	2°73' DEG	BC 67.1 KM	A LONG	3°47' DEG
B LAT	-3°44' DEG	CD 63.3 KM	B LAT	-4°35' DEG
B LONG	5°45' DEG	DA 72.7 KM	B LONG	4°67' DEG
C LAT	-5°65' DEG	TILT DISTANCE	C LAT	-4°65' DEG
C LONG	5°30' DEG	7.3	C LONG	4°65' DEG
D LAT	-5°54' DEG		D LAT	-4°56' DEG
D LONG	2°54' DEG		D LONG	3°45' DEG

SECTION I

ME NO.	TIME	S/C POSITION	S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
			YR, MO, DY	ALT RT	KN/SEC	TILT ANG	DEG	SUN AZIM	DEG	INCID ANG	DEG
061224-31	061224-31		670614	99.89	KN	5.0	DEG	87.13	DEG	72.95	DEG
				ALT RT	-0.0427	TILT AZIM	272.13	DEG			
				LAT	-4.19	DEG	SWING ANG	177.89	DEG	5.40	DEG
				LONG	4.36	DEG	N,DEV.	85.75	DEG	PHASE ANG	66.67 DEG

MEDIUM RESOLUTION				HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	LENGTH	CORNER	COORDINATE	SIDE LENGTH	LENGTH
A LAT	-22.88 DEG	AB 82.9 KM	AB 36.3 KM	A LAT	-3.99 DEG	AB 8.9 KM	AB 8.9 KM
A LONG	2.75 DEG	BC 67.3 KM	BC 36.3 KM	A LONG	3.49 DEG	BC 8.9 KM	BC 8.9 KM
B LAT	-3.17 DEG	CD 83.0 KM	CD 36.3 KM	B LAT	-4.08 DEG	CD 8.9 KM	CD 8.9 KM
B LONG	5.47 DEG	DA 72.6 KM	DA 9.2 KM	B LONG	4.69 DEG	DA 9.2 KM	DA 9.2 KM
C LAT	-5.37 DEG	TILT DISTANCE		C LAT	-4.37 DEG	TILT DISTANCE	
C LONG	5.31 DEG	7.3		C LONG	4.67 DEG		
D LAT	-5.26 DEG			D LAT	-4.29 DEG		
D LONG	2.57 DEG			D LONG	3.47 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT	
					SUN AZIM	TILT ANG
5102	67CE14 053623.11	ALT RT LAT LONG	250.34 KM 0.3044 KM/SEC 51.29 DEG 8.67 DEG	33.99 DEG TILT AZIM 240.89 DEG SWING ANG 178.41 DEG N.DEV. 115.62 DEG	101.79 DEG INCID ANG 77.76 DEG EMIS ANG 39.77 DEG PHASE ANG 57.72 DEG	48.22 DEG 1.08 DEG
					ALPHA	21.40 DEG
MEDIUM RESOLUTION						
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT	
5103	67CE14 102450.61	ALT RT LAT LONG	1236.54 KM 0.2570 KM/SEC 37.85 DEG 178.75 DEG	25.40 DEG TILT AZIM 280.99 DEG SWING ANG 89.61 DEG N.DEV. 4.05 DEG	SUN AZIM 262.91 DEG INCID ANG 78.98 DEG EMIS ANG 47.26 DEG PHASE ANG 126.24 DEG	LATITUDE LONGITUDE
					AB 151.6 KM BC 24.7 KM CD 152.1 KM DA 33.6 KM	
					C LAT 48.99 DEG C LONG 4.06 DEG D LAT 46.08 DEG D LONG -2.09 DEG	TILT DISTANCE
					ALPHA -47.26 DEG	
HIGH RESOLUTION						
MISSION/ FRAME NO.	TIME YR, MO, DY HR, MI, SEC	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT	
5103	67CE14 102450.61	ALT RT LAT LONG	1236.54 KM 0.2570 KM/SEC 37.85 DEG 178.75 DEG	25.40 DEG TILT AZIM 280.99 DEG SWING ANG 89.61 DEG N.DEV. 4.05 DEG	SUN AZIM 262.91 DEG INCID ANG 78.98 DEG EMIS ANG 47.26 DEG PHASE ANG 126.24 DEG	LATITUDE LONGITUDE
					AB 527.9 KM BC 219.2 KM CD 587.3 KM DA 217.6 KM	
					C LAT 28.41 DEG C LONG 146.63 DEG D LAT 47.60 DEG D LONG 142.40 DEG	TILT DISTANCE
					ALPHA 89.0	

LUNAR CRATER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/
FRAME NO.

5114 TIME 07CE14 S/C POSITION ALT 127.4 KM TILT ANG 4.54 DEG
 YR, MO, DY HR, MI, SEC 1241:31:31 ALT RT 0.1471 KM/SEC TILT AZIM 278.58 DEG
 SWING ANG 183.23 DEG
 LAT 23.45 DEG N.DEV. 85.32 DEG
 LONG 3.18 DEG PHASE ANG 66.11 DEG
 ALPHA 4.87 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 25.18 DEG	AB 106.1 KM
A LONG C.94 DEG	BC 05.9 KM
B LAT 24.78 DEG	CD 105.7 KM
B LONG 4.78 DEG	DA 92.4 KM
C LAT 21.55 DEG	TILT DISTANCE 6.5
C LONG 4.48 DEG	
D LAT 22.13 DEG	
D LONG 1.73 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 23.75 DEG	AB 4.62 KM
A LONG 1.99 DEG	BC 11.4 KM
B LAT 23.63 DEG	CD 4.62 KM
B LONG 3.65 DEG	DA 11.7 KM
C LAT 23.25 DEG	TILT DISTANCE 48.2
C LONG 3.62 DEG	
D LAT 23.37 DEG	
D LONG 1.96 DEG	

MISSION/
FRAME NO.

5105 TIME 07CE14 S/C POSITION ALT 131.45 KM TILT ANG 4.84 DEG
 YR, MO, DY HR, MI, SEC 1241:2.71 ALT RT 0.1564 KM/SEC TILT AZIM 295.30 DEG
 SWING ANG 200.95 DEG
 LAT 24.93 DEG N.DEV. 85.40 DEG
 LONG 3.32 DEG PHASE ANG 66.11 DEG
 ALPHA 4.93 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 26.23 DEG	AB 11.5 KM
A LONG C.57 DEG	BC 88.8 KM
B LAT 26.41 DEG	CD 128.3 KM
B LONG 5.03 DEG	DA 95.5 KM
C LAT 23.50 DEG	TILT DISTANCE 6.3
C LONG 4.68 DEG	
D LAT 22.68 DEG	
D LONG 6.83 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 25.35 DEG	AB 4.78 KM
A LONG 2.39 DEG	BC 11.8 KM
B LAT 25.21 DEG	CD 47.6 KM
B LONG 3.82 DEG	DA 12.1 KM
C LAT 24.83 DEG	TILT DISTANCE 51.5
C LONG 3.78 DEG	
D LAT 24.95 DEG	
D LONG 2.06 DEG	

PHOTO ILLUMINATION

SUN AZIM 96.95 DEG
 INCID ANG 70.98 DEG
 SWISS ANG 4.87 DEG
 PHASE ANG 66.11 DEG
 ALPHA 4.87 DEG

PHOTO ILLUMINATION

SUN AZIM 97.55 DEG
 INCID ANG 71.06 DEG
 SWISS ANG 5.21 DEG
 PHASE ANG 66.11 DEG
 ALPHA 4.93 DEG

PHOTO ILLUMINATION

SUN AZIM 97.55 DEG
 INCID ANG 71.06 DEG
 SWISS ANG 5.21 DEG
 PHASE ANG 66.11 DEG
 ALPHA 4.93 DEG

DATE 04/19/74

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MISSION/
FRAME NO.

5106 YR, MO, DY 670814
HR, MI, SEC 124:27.51

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	135.44 KM	TILT ANG 5.48 DEG	SUN AZIM 98.12 DEG	LATITUDE 26.57 DEG	
ALT RT	0.1654 KM/SEC	TIILT AZIM 309.43 DEG	INCID ANG 71.14 DEG	LONGITUDE 3.08 DEG	
LAT	26.35 DEG	SWING ANG 214.57 DEG	FMISS ANG 5.91 DEG		
LONG	3.45 DEG	N.DEV.	PHASE ANG 66.12 DEG		
		85.45 CFG	ALPHA 5.00 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT 28.39 DEG	AB 115.2 KM	CORNER COORDINATE	
A LONG 0.59 DEG	BC 93.7 KM	A LAT 26.84 DEG	SIDE LENGTH
B LAT 27.95 DEG	CD 110.4 KM	A LONG 2.17 DEG	AB 49.4 KM
B LONG 5.27 DEG	DA 98.7 KM	B LAT 26.70 DEG	BC 12.1 KM
C LAT 24.95 DEG	TIILT DISTANCE	B LONG 3.99 DEG	CD 49.1 KM
C LONG 4.88 DEG	7.8	C LAT 26.30 DEG	DA 12.5 KM
D LAT 25.14 DEG		C LONG 3.95 DEG	TIILT DISTANCE
D LONG 0.86 DEG		D LAT 26.43 DEG	58.4
		D LONG 2.15 DEG	

MISSION/
FRAME NO.

5107 YR, MO, DY 670814
HR, MI, SEC 124152.01

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	139.77 KM	TILT ANG 6.38 DEG	SUN AZIM 98.70 DEG	LATITUDE 26.10 DEG	
ALT RT	0.1743 KM/SEC	TIILT AZIM 319.97 DEG	INCID ANG 71.24 DEG	LONGITUDE 3.21 DFG	
LAT	27.70 0EG	SWING ANG 225.10 DEG	EMISS ANG 6.90 DEG		
LONG	3.59 0EG	N.DEV.	PHASE ANG 66.11 DEG		
		85.52 DEG	ALPHA 5.07 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT 20.01 DEG	AB 120.4 KM	CORNER COORDINATE	
A LONG 0.98 DEG	BC 95.1 KM	A LAT 28.38 DEG	SIDE LENGTH
B LAT 25.54 DEG	CD 113.2 KM	A LONG 2.26 DEG	AB 51.1 KM
B LONG 5.33 DEG	DA 102.5 KM	B LAT 28.23 DEG	BC 12.6 KM
C LAT 26.43 DEG	TIILT DISTANCE	B LONG 4.17 DEG	CD 59.7 KM
C LONG 5.67 DEG	9.1	C LAT 27.82 DEG	DA 13.0 KM
C LAT 25.63 DEG		C LONG 4.12 DEG	TIILT DISTANCE
D LONG 0.50 DEG		D LAT 27.95 DEG	59.0
		D LONG 2.24 DEG	

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	135.44 KM	TILT ANG 5.48 DEG	SUN AZIM 98.12 DEG	LATITUDE 26.57 DEG	
ALT RT	0.1654 KM/SEC	TIILT AZIM 309.43 DEG	INCID ANG 71.14 DEG	LONGITUDE 3.08 DEG	
LAT	26.35 DEG	SWING ANG 214.57 DEG	FMISS ANG 5.91 DEG		
LONG	3.45 DEG	N.DEV.	PHASE ANG 66.12 DEG		
		85.45 CFG	ALPHA 5.00 DEG		

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	139.77 KM	TILT ANG 6.38 DEG	SUN AZIM 98.70 DEG	LATITUDE 26.10 DEG	
ALT RT	0.1743 KM/SEC	TIILT AZIM 319.97 DEG	INCID ANG 71.24 DEG	LONGITUDE 3.21 DFG	
LAT	27.70 0EG	SWING ANG 225.10 DEG	EMISS ANG 6.90 DEG		
LONG	3.59 0EG	N.DEV.	PHASE ANG 66.11 DEG		
		85.52 DEG	ALPHA 5.07 DEG		

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	
A LAT 26.84 DEG	AB 49.4 KM	CORNER COORDINATE	
A LONG 2.17 DEG	BC 12.1 KM	A LAT 28.38 DEG	SIDE LENGTH
B LAT 26.70 DEG	CD 49.1 KM	A LONG 2.26 DEG	AB 51.1 KM
B LONG 3.99 DEG	DA 12.5 KM	B LAT 28.23 DEG	BC 12.6 KM
C LAT 26.30 DEG	TIILT DISTANCE	B LONG 4.17 DEG	CD 59.7 KM
C LONG 3.95 DEG	58.4	C LAT 27.82 DEG	DA 13.0 KM
D LAT 26.43 DEG		C LONG 4.12 DEG	TIILT DISTANCE
D LONG 2.15 DEG		D LAT 27.95 DEG	59.0
		D LONG 2.24 DEG	

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MISSION/
FRAME NO.

5108 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY ALT 97°46' KM TILT ANG 10°15' DEG SUN AZIM 88°48' DEG LATITUDE -0°05 DEG
 HR.MI.SEC ALT RT -0.0142 KM/SEC TILT AZIM 269°95' DEG INCID ANG 72°21' DEG LONGITUDE -1°10 DEG
 LAT -0°05 DEG SWING ANG 175°40' DEG EMISS ANG 10°73' DEG
 LONG -0°52' DEG N.DEV. 85.44' DEG PHASE ANG 61°48' DEG
 ALPHA 10°73' DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT	1°29' DEG	AB 83°2' KM	CORNER COORDINATE SIDE LENGTH
A LONG	-2°48' DEG	BC 63°8' KM	A LAT 0°15' DEG AB 36°3 KM
B LAT	0°90' DEG	CD 84°1' KM	A LONG -1°70' DEG BC 8°7 KM
B LONG	-0°23' DEG	DA 74°8' KM	B LAT 0°04' DEG CD 36°4 KM
C LAT	-1°20' DEG	TILT DISTANCE 14°5'	B LONG -0°51' DEG DA 9°3 KM
C LONG	0°07' DEG		C LAT -0°24' DEG TILT DISTANCE 09°0'
D LAT	-1°17' DEG		C LONG -0°53' DEG
D LONG	-2°70' DEG		D LAT -0°16' DEG

HIGH RESOLUTION

... ALPHA 10°73' DEG

MISSION/
FRAME NO.

5109 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY ALT 97°40' KM TILT ANG 10°14' DEG SUN AZIM 88°56' DEG LATITUDE 0°22 DEG
 HR.MI.SEC ALT RT -0.0124 KM/SEC TILT AZIM 271°41' DEG INCID ANG 72°18' DEG LONGITUDE -1°07 DEG
 LAT 0°20' DEG SWING ANG 176°87' DEG EMISS ANG 10°71' DEG
 LONG -0°50' DEG N.DEV. 85.49' DEG PHASE ANG 61°48' DEG
 ALPHA 10°70' DEG

MEDIUM RESOLUTION

CORNER	COORDINATE	SIDE LENGTH	HIGH RESOLUTION
A LAT	1°57' DEG	AB 63°3' KM	CORNER COORDINATE SIDE LENGTH
A LONG	-2°46' DEG	BC 63°8' KM	A LAT 0°42' DEG AB 36°3 KM
B LAT	1°18' DEG	CD 83°9' KM	A LONG -1°68' DEG BC 8°7 KM
B LONG	0°25' DEG	DA 74°8' KM	B LAT 0°32' DEG CD 36°4 KM
C LAT	-0°52' DEG	TILT DISTANCE 14°4'	B LONG -0°49' DEG DA 9°3 KM
C LONG	0°10' DEG		C LAT 0°03' DEG TILT DISTANCE 08°8'
D LAT	-0°89' DEG	14°5'	C LONG -0°51' DEG
D LONG	-2°67' DEG		D LAT 0°11' DEG

HIGH RESOLUTION

... ALPHA 10°71' DEG

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MISSION /

FRAME NO.

5110

TIME

670614

YR. MO. DY

154454.91

HR. MI. SEC

S/C POSITION
 ALT 97°35' KM
 ALT RT -0.0106 KM/SEC
 LAT 0°46' DEG
 LONG -0.48 DEG
 N.DEV. 85.54 DEG

S/C ORIENTATION
 TILT ANG 10°13' DEG
 TILT AZIM 272°86' DEG
 SWING ANG 179°34' DEG
 N.DEV. 85.54 DEG

SUN AZIM 88°65' DEG
 INCID ANG 72°15' DEG
 EMISS ANG 10°70' DEG
 PHASE ANG 01°48' DEG
 ALPHA 10.67 DEG

MISSION /

FRAME NO.

5111

TIME

670614

YR. MO. DY

154459.41

HR. MI. SEC

S/C POSITION
 ALT 97.31 KM
 ALT RT -0.0087 KM/SEC
 LAT 0°72' DEG
 LONG -0.46 DEG
 N.DEV. 85.59 DEG

S/C ORIENTATION
 TILT ANG 10°12' DEG
 TILT AZIM 274°31' DEG
 SWING ANG 179°82' DEG
 N.DEV. 85.59 DEG

SUN AZIM 88°74' DEG
 INCID ANG 72°12' DEG
 EMISS ANG 10°69' DEG
 PHASE ANG 61.48 DEG
 ALPHA 10.64 DEG

MISSION /

FRAME NO.

5111

TIME

670614

YR. MO. DY

154459.41

HR. MI. SEC

S/C POSITION
 ALT 97.31 KM
 ALT RT -0.0087 KM/SEC
 LAT 0°72' DEG
 LONG -0.37 DEG
 N.DEV. 85.59 DEG

S/C ORIENTATION
 TILT ANG 10°12' DEG
 TILT AZIM 274°31' DEG
 SWING ANG 179°82' DEG
 N.DEV. 85.59 DEG

SUN AZIM 88°74' DEG
 INCID ANG 72°12' DEG
 EMISS ANG 10°69' DEG
 PHASE ANG 61.48 DEG
 ALPHA 10.64 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.69 DEG AB 36.3 KM
 A LONG -1.66 DEG BC 8.7 KM
 B LAT 0.59 DEG CD 36.3 KM
 B LONG -0.47 DEG DA 9.3 KM
 C LAT 0.30 DEG CLONG -0.49 DEG 08.7
 C LONG 0.39 DEG DLAT 0.49 DEG
 D LONG -1.68 DEG D LONG -1.68 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.69 DEG AB 36.3 KM
 A LONG -1.66 DEG BC 8.7 KM
 B LAT 0.59 DEG CD 36.3 KM
 B LONG -0.47 DEG DA 9.3 KM
 C LAT 0.30 DEG CLONG -0.49 DEG 08.7
 C LONG 0.39 DEG DLAT 0.49 DEG
 D LONG -1.68 DEG D LONG -1.68 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.69 DEG AB 36.3 KM
 A LONG -1.66 DEG BC 8.7 KM
 B LAT 0.59 DEG CD 36.3 KM
 B LONG -0.47 DEG DA 9.3 KM
 C LAT 0.30 DEG CLONG -0.49 DEG 08.7
 C LONG 0.39 DEG DLAT 0.49 DEG
 D LONG -1.68 DEG D LONG -1.68 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 0.69 DEG AB 36.3 KM
 A LONG -1.66 DEG BC 8.7 KM
 B LAT 0.59 DEG CD 36.3 KM
 B LONG -0.47 DEG DA 9.3 KM
 C LAT 0.30 DEG CLONG -0.49 DEG 08.7
 C LONG 0.39 DEG DLAT 0.49 DEG
 D LONG -1.68 DEG D LONG -1.68 DEG

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MISSION/
FRAME NO.

5112 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 670814 ALT 97.57 KM TILT ANG 19.78 DEG SUN AZIM 88.43 DEG LATITUDE -0.14 DEG
 HR.MI.SEC 185549.00 ALT RT -0.0138 KM/SEC TILT AZIM 96.63 DEG INCID ANG 70.61 DEG LONGITUDE -1.11 DEG
 LAT -0.01 DEG SWING ANG 2.48 DEG EMISS ANG 20.94 DEG
 LONG -2.27 DEG N.DEV. 86.29 DEG PHASE ANG 91.35 DEG
 ALPHA -20.77 DEG

MISSION/
FRAME NO.

5113 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 670814 ALT 97.51 KM TILT ANG 19.77 DEG SUN AZIM 88.53 DEG LATITUDE 0.15 DEG
 HR.MI.SEC 185553.74 ALT RT -0.0119 KM/SEC TILT AZIM 95.87 DEG INCID ANG 70.58 DEG LONGITUDE 0.09 DEG
 LAT 0.25 DEG SWING ANG 1.68 DEG EMISS ANG 20.93 DEG
 LONG -2.25 DEG N.DEV. 86.19 DEG PHASE ANG 91.35 DEG
 ALPHA -20.79 DEG

MISSION/
FRAME NO.

5114 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 670814 ALT 94.3 KM TILT ANG 19.77 DEG SUN AZIM 88.53 DEG LATITUDE 0.15 DEG
 HR.MI.SEC 185553.74 ALT RT -0.0119 KM/SEC TILT AZIM 95.87 DEG INCID ANG 70.58 DEG LONGITUDE 0.09 DEG
 LAT 0.25 DEG SWING ANG 1.68 DEG EMISS ANG 20.93 DEG
 LONG -2.25 DEG N.DEV. 86.19 DEG PHASE ANG 91.35 DEG
 ALPHA -20.79 DEG

MISSION/
FRAME NO.

5115 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 670814 ALT 94.3 KM TILT ANG 19.77 DEG SUN AZIM 88.53 DEG LATITUDE 0.15 DEG
 HR.MI.SEC 185553.74 ALT RT -0.0119 KM/SEC TILT AZIM 95.87 DEG INCID ANG 70.58 DEG LONGITUDE 0.09 DEG
 LAT 0.25 DEG SWING ANG 1.68 DEG EMISS ANG 20.93 DEG
 LONG -2.25 DEG N.DEV. 86.19 DEG PHASE ANG 91.35 DEG
 ALPHA -20.79 DEG

MISSION/
FRAME NO.

5116 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR.MD.DY 670814 ALT 94.3 KM TILT ANG 19.77 DEG SUN AZIM 88.53 DEG LATITUDE 0.15 DEG
 HR.MI.SEC 185553.74 ALT RT -0.0119 KM/SEC TILT AZIM 95.87 DEG INCID ANG 70.58 DEG LONGITUDE 0.09 DEG
 LAT 0.25 DEG SWING ANG 1.68 DEG EMISS ANG 20.93 DEG
 LONG -2.25 DEG N.DEV. 86.19 DEG PHASE ANG 91.35 DEG
 ALPHA -20.79 DEG

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MISSION /

FRAME NO.

5114 YR, MO, DY

67CE14

HR, MI, SEC

185550.4E

TIME

S/C POSITION

ALT

97.46 KM

TILT ANG

19.77 DEG

INCID ANG

88.63 DEG

LATITUDE

0.43 DEG

LONGITUDE

-1.07 DEG

ALT RT

-0.0100 KM/SEC

TILT AZIM

95.11 DEG

EMISS ANG

70.55 DEG

SWING ANG

0.87 DEG

PHASE ANG

20.93 DEG

N.DEV.

86.08 DEG

ALPHA

91.35 DEG

LONG

-2.23 DEG

SIDES LENGTH

AB

94.4 KM

BC

85.8 KM

CD

94.9 KM

DA

62.4 KM

TILT DISTANCE

E

28.4

CORNERS COORDINATE

A LAT

1.56 DEG

A LONG

-2.29 DEG

B LAT

1.72 DEG

B LONG

0.82 DEG

C LAT

-1.11 DEG

C LONG

0.62 DEG

D LAT

-0.49 DEG

D LONG

-2.44 DEG

PHOTO ILLUMINATION

SUN AZIM

88.63 DEG

INCID ANG

70.55 DEG

EMISS ANG

20.93 DEG

PHASE ANG

91.35 DEG

ALPHA

-20.82 DEG

HIGH RESOLUTION

CORNER COORDINATE

A LAT

0.62 DEG

A LONG

-1.67 DEG

B LAT

0.55 DEG

B LONG

-0.35 DEG

C LAT

0.21 DEG

C LONG

-0.37 DEG

D LAT

0.33 DEG

D LONG

-1.70 DEG

PHOTO ILLUMINATION

SUN AZIM

88.73 DEG

INCID ANG

70.52 DEG

EMISS ANG

20.93 DEG

PHASE ANG

91.35 DEG

ALPHA

-20.84 DEG

HIGH RESOLUTION

CORNER COORDINATE

A LAT

0.91 DEG

A LONG

-1.65 DEG

B LAT

0.83 DEG

B LONG

-0.33 DEG

C LAT

0.50 DEG

C LONG

-0.35 DEG

D LAT

0.62 DEG

D LONG

-1.67 DEG

MISSION /

FRAME NO.

5115 YR, MO, DY

670814

HR, MI, SEC

1856 3.22

TIME

S/C POSITION

ALT

97.41 KM

TILT ANG

19.77 DEG

INCID ANG

88.73 DEG

LATITUDE

0.72 DEG

LONGITUDE

-1.05 DEG

ALT RT

-0.0081 KM/SEC

TILT AZIM

94.35 DEG

SWING ANG

0.06 DEG

N.DEV.

85.98 DEG

SIDES LENGTH

AB

94.6 KM

BC

85.8 KM

CD

94.6 KM

DA

62.4 KM

TILT DISTANCE

E

28.4

CORNERS COORDINATE

A LAT

1.85 DEG

A LONG

-2.27 DEG

B LAT

2.01 DEG

B LONG

0.85 DEG

C LAT

-0.81 DEG

C LONG

0.64 DEG

D LAT

-0.20 DEG

D LONG

-2.42 DEG

PHOTO ILLUMINATION

SUN AZIM

88.73 DEG

INCID ANG

70.52 DEG

EMISS ANG

20.93 DEG

PHASE ANG

91.35 DEG

ALPHA

-20.84 DEG

HIGH RESOLUTION

CORNER COORDINATE

A LAT

0.91 DEG

A LONG

-1.65 DEG

B LAT

0.83 DEG

B LONG

-0.33 DEG

C LAT

0.50 DEG

C LONG

-0.35 DEG

D LAT

0.62 DEG

D LONG

-1.67 DEG

PHOTO ILLUMINATION

SUN AZIM

88.73 DEG

INCID ANG

70.52 DEG

EMISS ANG

20.93 DEG

PHASE ANG

91.35 DEG

ALPHA

-20.84 DEG

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MISSION/
FRAME NO.

5116 TIME 670814 S/C POSITION ALT 115.22 KM TILT ANG 14.50 DEG
 YR, MO, DY HR, MI, SEC 220243.30 ALT RT -0.1112 KM/SEC TILT AZIM 104.04 DEG
 LAT -14.15 DEG SWING ANG 10.24 DEG
 LONG -5.14 DEG N.DEV. 86.92 DEG PHASE ANG 87.63 DEG
 ALPHA -14.68 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -13.06 DEG	AB 101.5 KM
A LONG -5.61 DEG	BC 93.7 KM
B LAT -12.99 DEG	CD 106.5 KM
B LONG -2.17 DEG	DA 74.7 KM
C LAT -16.08 DEG	TILT DISTANCE 20.4
C LONG -2.24 DEG	
D LAT -15.52 DEG	
D LONG -5.81 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -114.62 KM	AB 101.2 KM
ALT RT -0.1092 KM/SEC	BC 93.1 KM
LA 1 -13.85 DEG	CD 104.7 KM
LONG -5.11 DEG	DA 74.3 KM
	TILT DISTANCE 29.3

MISSION/
FRAME NO.

5117 TIME 670814 S/C POSITION ALT 114.62 KM TILT ANG 14.45 DEG
 YR, MO, DY HR, MI, SEC 220248.72 ALT AZIM 102.86 DEG
 LAT -13.85 DEG SWING ANG 9.03 DEG
 LONG -5.11 DEG N.DEV. 86.84 DEG PHASE ANG 87.63 DEG
 ALPHA -14.73 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -12.74 DEG	AB 101.2 KM
A LONG -5.58 DEG	BC 93.1 KM
B LAT -12.66 DEG	CD 104.7 KM
B LONG -2.15 DEG	DA 74.3 KM
C LAT -15.74 DEG	TILT DISTANCE 29.3
C LONG -2.24 DEG	
D LAT -15.19 DEG	
D LONG -5.77 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -14.17 DEG	AB 44.5 KM
A LONG -4.86 DEG	BC 11.4 KM
B LAT -14.25 DEG	CD 44.8 KM
B LONG -3.35 DEG	DA 10.3 KM
C LAT -14.63 DEG	TILT DISTANCE 57.4
C LONG -3.36 DEG	
D LAT -14.51 DEG	
D LONG -4.88 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT -13.84 DEG	AB 44.3 KM
A LONG -4.83 DEG	BC 11.3 KM
B LAT -13.93 DEG	CD 44.5 KM
B LONG -3.33 DEG	DA 10.2 KM
C LAT -14.30 DEG	TILT DISTANCE 56.9
C LONG -3.35 DEG	
D LAT -14.18 DEG	
D LONG -4.86 DEG	

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MISSION/
FRAME NO.

5118 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR, MO, DY ALT 114.04 KM TILT ANG 14.41 DEG SUN AZIM 84.4 DEG LATITUDE -13.74 DEG
 HR, MIN, SEC ALT RT -0.1071 KM/SEC TILT AZIM 101.53 DEG INCID ANG 72.90 DEG LONGITUDE -6.11 DEG
 LAT -13.54 DEG SWING ANG 7.81 DEG EMISS ANG 15.38 DEG
 LONG -5.09 DEG N.DEV. 86.76 DEG PHASE ANG 87.63 DEG
 ALPHA -14.79 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -12.42 DEG	AB 100.9 KM	A LAT -13.52 DEG	AB 44.1 KM
A LONG -5.55 DEG	BC 92.6 KM	A LONG -4.81 DEG	BC 11.2 KM
B LAT -12.34 DEG	CD 103.9 KM	B LAT -13.60 DEG	CD 44.3 KM
B LONG -2.14 DEG	DA 73.9 KM	B LONG -3.31 DEG	DA 10.2 KM
C LAT -15.40 DEG	TILT DISTANCE 20.3	C LAT -13.97 DEG	TILT DISTANCE 56.4
C LONG -2.23 DEG		C LONG -3.33 DEG	
D LAT -14.85 DEG		D LAT -13.86 DEG	
D LONG -5.74 DEG		D LONG -4.63 DEG	

MISSION/
FRAME NO.

5119 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR, MO, DY ALT 113.48 KM TILT ANG 14.38 DEG SUN AZIM 84.23 DEG LATITUDE -13.41 DEG
 HR, MIN, SEC ALT RT -0.1051 KM/SEC TILT AZIM 100.51 DEG INCID ANG 72.85 DEG LONGITUDE -4.09 DEG
 LAT -13.24 DEG SWING ANG 6.61 DEG EMISS ANG 15.34 DEG
 LONG -5.06 DEG N.DEV. 86.69 DEG PHASE ANG 87.63 DEG
 ALPHA -14.82 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT -12.11 DEG	AB 100.6 KM	A LAT -13.20 DEG	AB 43.9 KM
A LONG -5.52 DEG	BC 92.1 KM	A LONG -4.78 DEG	BC 11.2 KM
B LAT -12.03 DEG	CD 103.1 KM	B LAT -13.28 DEG	CD 44.0 KM
B LONG -5.12 DEG	DA 73.5 KM	B LONG -3.30 DEG	DA 10.1 KM
C LAT -15.06 DEG	TILT DISTANCE 20.2	C LAT -13.65 DEG	TILT DISTANCE 56.0
C LONG -2.23 DEG		C LONG -3.32 DEG	
D LAT -14.82 DEG		D LAT -13.53 DEG	
D LONG -5.71 DEG		D LONG -4.81 DEG	

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 84.4 DEG LATITUDE -13.74 DEG
 INCID ANG 72.90 DEG LONGITUDE -6.11 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 84.23 DEG LATITUDE -13.41 DEG
 INCID ANG 72.85 DEG LONGITUDE -4.09 DEG

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MISSION/

FRAME NO.

E120 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 67CE15 ALT 106.09 KM TILT ANG 11.95 DEG SUN AZIM 92.93 DEG LATITUDE 12.40 DEG
 HR, HI, SEC 0121:25.52 ALT RT 0.0729 KM/SEC TILT AZIM 91.21 DEG INCID ANG 70.39 DEG LONGITUDE -4.01 DEG
 LAT 12.41 DEG SWING ANG 356.21 DEG EMISS ANG 12.70 DEG
 LONG -4.77 DEG N.DEV. 84.77 DEG PHASE ANG 83.08 DEG
 ALPHA -12.70 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 13.67 DEG	AB 93.1 KM	A LAT 12.61 DEG	AB 40.2 KM
A LONG -5.33 DEG	BC 83.2 KM	A LONG -4.65 DEG	BC 13.2 KM
B LAT 13.62 DEG	CD 92.3 KM	B LAT 12.50 DEG	CD 40.1 KM
B LONG -2.17 DEG	DA 69.1 KM	B LONG -3.29 DEG	DA 9.4 KM
C LAT 11.93 DEG	TILT DISTANCE 16.7	C LAT 12.16 DEG	TIILT DISTANCE 28.9
C LONG -2.47 DEG		C LONG -3.33 DEG	
D LAT 11.39 DEG		D LAT 12.30 DEG	
D LONG -5.52 DEG		D LONG -4.67 DEG	

MISSION/

FRAME NO.

E121 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 67CE15 ALT 106.45 KM TILT ANG 11.98 DEG SUN AZIM 93.94 DEG LATITUDE 12.69 DEG
 HR, HI, SEC 0121:34.4C ALT RT 0.0748 KM/SEC TILT AZIM 89.90 DEG INCID ANG 70.37 DEG LONGITUDE -3.99 DEG
 LAT 12.69 DEG SWING ANG 354.75 DEG EMISS ANG 12.72 DEG
 LONG -4.75 DEG N.DEV. 84.73 DEG PHASE ANG 83.08 DEG
 ALPHA -12.71 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 12.97 DEG	AB 93.5 KM	A LAT 12.90 DEG	AB 40.3 KM
A LONG -5.21 DEG	BC 83.5 KM	A LONG -4.62 DEG	BC 13.3 KM
B LAT 12.93 DEG	CD 92.1 KM	B LAT 12.80 DEG	CD 40.3 KM
B LONG -2.12 DEG	DA 69.4 KM	B LONG -3.26 DEG	DA 9.5 KM
C LAT 11.19 DEG	TILT DISTANCE 16.7	C LAT 12.46 DEG	TIILT DISTANCE 29.1
C LONG -2.44 DEG		C LONG -3.30 DEG	
D LAT 11.65 DEG		D LAT 12.59 DEG	
D LONG -5.59 DEG		D LONG -4.65 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 12.61 DEG	AB 40.2 KM	A LAT 12.61 DEG	AB 40.2 KM
A LONG -4.65 DEG	BC 13.2 KM	A LONG -4.65 DEG	BC 13.2 KM
B LAT 12.50 DEG	CD 40.1 KM	B LAT 12.50 DEG	CD 40.1 KM
B LONG -3.29 DEG	DA 9.4 KM	B LONG -3.29 DEG	DA 9.4 KM
C LAT 12.16 DEG	TIILT DISTANCE 28.9	C LAT 12.16 DEG	TIILT DISTANCE 28.9
C LONG -3.33 DEG		C LONG -3.33 DEG	
D LAT 12.30 DEG		D LAT 12.30 DEG	
D LONG -4.67 DEG		D LONG -4.67 DEG	

SUN AZIM	INCID ANG	SUN AZIM	INCID ANG
92.93 DEG	70.39 DEG	93.94 DEG	70.37 DEG
EMISS ANG	PHASE ANG	EMISS ANG	PHASE ANG
12.70 DEG	83.08 DEG	12.72 DEG	83.08 DEG
ALPHA		ALPHA	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 12.61 DEG	AB 40.2 KM	A LAT 12.61 DEG	AB 40.2 KM
A LONG -4.65 DEG	BC 13.2 KM	A LONG -4.65 DEG	BC 13.2 KM
B LAT 12.50 DEG	CD 40.1 KM	B LAT 12.50 DEG	CD 40.1 KM
B LONG -3.29 DEG	DA 9.4 KM	B LONG -3.29 DEG	DA 9.4 KM
C LAT 12.16 DEG	TIILT DISTANCE 28.9	C LAT 12.16 DEG	TIILT DISTANCE 28.9
C LONG -3.33 DEG		C LONG -3.33 DEG	
D LAT 12.30 DEG		D LAT 12.30 DEG	
D LONG -4.67 DEG		D LONG -4.67 DEG	

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MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	106.83 KM	TIILT ANG	12.00 DEG	SUN AZIM	93.16 DEG	LATITUDE	12.99 DEG
ALT RT	0.0767 KM/SEC	TIILT AZIM	88.58 DEG	INCID ANG	70.36 DEG	LONGITUDE	-3.95 DEG
LAT	12.97 DEG	SWING ANG	353.41 DEG	EMISS ANG	12.75 DEG		
LONG.	-4.73 DEG	N.DEV.	84.63 DEG	PHASE ANG	B3.08 DEG		
				ALPHA	-12.72 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION		CORNER COORDINATE		SIDE LENGTH	
A LAT	14.27 DEG	AB	94.1 KM	A LAT	13.20 DEG	AB	4.5 KM		
A LONG	-5.49 DEG	BC	83.9 KM	A LONG	-4.60 DEG	BC	10.3 KM		
B LAT	14.23 DEG	CD	92.3 KM	B LAT	13.39 DEG	CD	4.4 KM		
B LONG	-2.68 DEG	DA	69.6 KM	B LONG	-3.23 DEG	DA	9.5 KM		
C LAT	11.48 DEG	TIILT DISTANCE		C LAT	12.76 DEG	TIILT DISTANCE			
C LONG	-2.40 DEG	16.7		C LONG	-3.26 DEG	29.4			
D LAT	11.58 DEG			D LAT	12.89 DEG				
D LONG	-5.47 DEG			D LONG	-4.62 DEG				

MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	107.21 KM	TIILT ANG	12.04 DEG	SUN AZIM	93.27 DEG	LATITUDE	13.29 DEG
ALT RT	0.0785 KM/SEC	TIILT AZIM	87.26 DEG	INCID ANG	70.35 DEG	LONGITUDE	-3.93 DEG
LAT	13.26 DEG	SWING ANG	352.95 DEG	EMISS ANG	12.79 DEG		
LONG	-4.70 DEG	N.DEV.	84.55 DEG	PHASE ANG	B3.08 DEG		
				ALPHA	-12.74 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		HIGH RESOLUTION		CORNER COORDINATE		SIDE LENGTH	
A LAT	14.58 DEG	AB	94.7 KM	A LAT	13.50 DEG	AB	4.7 KM		
A LONG	-5.26 DEG	BC	84.2 KM	A LONG	-4.57 DEG	BC	10.4 KM		
B LAT	14.54 DEG	CD	92.4 KM	B LAT	13.40 DEG	CD	4.5 KM		
B LONG	-2.03 DEG	DA	69.9 KM	B LONG	-3.20 DEG	DA	9.5 KM		
C LAT	11.78 DEG	TIILT DISTANCE		C LAT	13.06 DEG	TIILT DISTANCE			
C LONG	-2.37 DEG	16.8		C LONG	-3.23 DEG	29.8			
D LAT	12.29 DEG			D LAT	13.19 DEG				
D LONG	-5.45 DEG			D LONG	-4.60 DEG				

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MISSION/
FRAME NO.

5124
 YR-MO-DY 57CE15
 HR-MI-SEC 0220C 2.081
 S/C POSITION ALT 1236.58 KM
 ALT RT 0.2565 KM/SEC
 LAT 37.83 DEG
 LONG 176.09 DEG
 N.DEV. 4.96 DEG

S/C ORIENTATION

TIILT ANG 24.99 DEG
 TIILT AZIM 281.58 DEG
 SWING ANG 91.20 DEG
 N.DEV. 4.96 DEG

S/C RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 56.08 DEG AB 021.3 KM
 A LONG 167.80 DEG BC 410.1 KM
 B LAT 22.14 DEG CD 521.9 KM
 B LONG 162.01 DEG DA 311.4 KM
 C LAT 12.75 DEG TIILT DISTANCE 37.1
 C LONG 136.12 DEG
 D LAT 61.57 DEG
 D LONG 111.33 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 47.88 DEG AB 524.6 KM
 A LONG 144.77 DEG BC 210.3 KM
 B LAT 30.57 DEG CD 581.5 KM
 B LONG 296.78 DEG DA 214.0 KM
 C LAT 28.89 DEG TILT DISTANCE 83.7
 C LONG 139.02 DEG
 D LAT 47.81 DEG
 D LONG 134.23 DEG

MISSION/
FRAME NO.

5125
 YR-MO-DY 67CE15
 HR-MI-SEC 0416 4.93
 S/C POSITION ALT 220.06 KM
 ALT RT -0.2792 KM/SEC
 LAT -42.21 DEG
 LONG -11.67 DEG
 N.DEV. A3.52 DEG

S/C ORIENTATION

TIILT ANG 5.47 DEG
 TIILT AZIM 185.59 DEG
 SWING ANG 89.41 DEG
 N.DEV. 6.16 DEG

S/C RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 47.88 DEG AB 79.62 KM
 A LONG 81.10 DEG BC 6.16 KM
 B LAT 79.44 DEG CD 20.2 KM
 B LONG -9.88 DEG DA 20.1 KM
 C LAT -43.37 DEG TILT DISTANCE 58.2
 C LONG -9.94 DEG
 D LAT -43.07 DEG
 D LONG -13.55 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -42.42 DEG AB 79.4 KM
 A LONG -13.41 DEG BC 20.2 KM
 B LAT -42.70 DEG CD 20.1 KM
 B LONG -9.88 DEG DA 20.1 KM
 C LAT -43.37 DEG TILT DISTANCE 58.2
 C LONG -9.94 DEG
 D LAT -43.07 DEG
 D LONG -13.55 DEG

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MISSION/

FRAME NO.

S126
YR. MO. DY
HR. MI. SEC

TIME

677615

041615.36

S/C POSITION

ALT RT

-0.2765

KM/SEC

LAT

-41.70

DEG

LONG

-11.53

DEG

TILT ANG

4.95

DEG

TILT AZIM

185.58

DEG

SWING ANG

89.35

DEG

N.DEV.

83.69

DEG

PHASE ANG

79.44

DEG

ALPHA

1.45

DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 177.8 KM

BC 156.3 KM

CD 167.4 KM

DA 155.2 KM

TILT DISTANCE

6.8

C LONG

-7.68 DEG

D LAT

-44.50 DEG

D LONG

-16.36 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 78.3 KM

BC 13.9 KM

CD 79.0 KM

DA 19.8 KM

TILT DISTANCE

52.7

C LAT

-42.77 DEG

C LONG

-9.89 DEG

D LAT

-42.49 DEG

D LONG

-13.42 DEG

MISSION/

FRAME NO.

S127
YR. MO. DY
HR. MI. SEC

TIME

677615

041625.35

S/C POSITION

ALT

214.41

KM

TILT. ANG

4.43

DEG

TILT AZIM

165.46

DEG

SWING ANG

89.29

DEG

N.DEV.

83.75

DEG

MEDIUM RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 173.3 KM

BC 151.6 KM

CD 184.0 KM

DA 151.8 KM

TILT DISTANCE

6.1

C LONG

-7.73 DEG

D LAT

-42.87 DEG

D LONG

-16.13 DEG

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

AB 77.3 KM

BC 19.6 KM

CD 77.9 KM

DA 19.6 KM

TILT DISTANCE

47.1

C LAT

-41.89 DEG

C LONG

-13.29 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SUN AZIM 79.55 DEG

INCID ANG 80.93 DEG

EMISS ANG 5.57 DEG

PHASE ANG 79.44 DEG

ALPHA 1.45 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SUN AZIM 79.69 DEG

INCID ANG 80.76 DEG

EMISS ANG 4.98 DEG

PHASE ANG 79.44 DEG

ALPHA 1.29 DEG

PHOTO ILLUMINATION

PRINCIPAL POINT

SUN AZIM 79.69 DEG

INCID ANG 80.76 DEG

EMISS ANG 4.98 DEG

PHASE ANG 79.44 DEG

ALPHA 1.29 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION /

FRAME NO.

5126 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670815 ALT 211.56 KM TILT ANG 3.89 DEG SUN AZIM 79.72 DEG LATITUDE -41.12 DEG
 HR, MI, SEC 311635.90 ALT RT -0.2712 KM/SEC TILT AZIM 185.32 DEG INCID ANG 80.59 DEG LONGITUDE -11.44 DEG
 LAT -45.54 DEG SWING ANG 89.19 DEG EMISS ANG 4.37 DEG
 LONG -11.34 DEG N.DEV. 83.81 DEG PHASE ANG 79.44 DEG
 ALPHA 1.12 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -38.38 DEG AB 171.1 KM
 A LONG -14.72 DEG BC 149.3 KM
 B LAT -18.57 DEG CD 186.7 KM
 B LONG -7.52 DEG DA 149.5 KM
 C LAT -43.89 DEG TILT DISTANCE 5.3
 C LONG -7.72 DEG
 D LAT -43.23 DEG
 D LONG -15.51 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -40.66 DEG AB 76.2 KM
 A LONG -13.04 DEG BC 19.3 KM
 B LAT -40.93 DEG CD 76.7 KM
 B LONG -9.74 DEG DA 19.3 KM
 C LAT -41.56 DEG TILT DISTANCE 41.4
 C LONG -9.80 DEG
 D LAT -41.29 DEG
 D LONG -13.16 DEG

MISSION /

FRAME NO.

5129 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670815 ALT 231.74 KM TILT ANG 6.98 DEG SUN AZIM 107.73 DEG LATITUDE 48.63 DEG
 HR, MI, SEC 075437.20 ALT RT 0.2899 KM/SEC TILT AZIM 65.95 DEG INCID ANG 73.16 DEG LONGITUDE -2.89 DEG
 LAT 48.30 DEG SWING ANG 328.49 DEG EMISS ANG 7.93 DEG
 LONG -4.19 DEG N.DEV. 61.37 DEG PHASE ANG 79.22 DEG
 ALPHA -6.13 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 51.70 DEG AB 202.5 KM
 A LONG -7.31 DEG BC 174.3 KM
 B LAT 5C.56 DEG CD 191.9 KM
 B LONG 2.34 DEG DA 157.8 KM
 C LAT 45.39 DEG TILT DISTANCE 9.6
 C LONG 1.19 DEG
 D LAT 45.50 DEG
 D LONG -7.78 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 49.20 DEG AB 85.5 KM
 A LONG -4.90 DEG BC 21.8 KM
 B LAT 4B.81 DEG CD 85.0 KM
 B LONG -0.64 DEG DA 20.9 KM
 C LAT 48.10 DEG TILT DISTANCE 74.5
 C LONG -3.85 DEG
 D LAT 48.51 DEG
 D LONG -5.02 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION

FRAME NO.
S130TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	7.29	SUN AZIM	108.04 DEG	LATITUDE	49.31 DEG
ALT RT	KM/SEC	TILT AZIM	62.25	INCID ANG	73.26 DFG	LONGITUDE	-2.74 NEG
0.2926		SWING ANG	324.63	EMISS ANG	8.29 DEG		
LAT	48.86 DEG	N.DEV.	81.17	PHASE ANG	79.22 DEG		
LONG	-4.09 DEG			ALPHA	-5.25 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	52.41 DEG	AB	206.5 KM	A LAT	49.05 DEG	AB	86.9 KM
A LONG	-7.29 DEG	BC	177.3 KM	A LONG	-4.80 DEG	BC	22.1 KM
B LAT	51.63 DEG	CD	198.3 KM	B LAT	49.44 DEG	CD	85.2 KM
B LONG	3.73 DEG	DA	165.4 KM	B LONG	-1.42 DEG	DA	21.2 KM
C LAT	45.98 DEG	TILT DISTANCE		C LAT	48.73 DEG	TILT DISTANCE	
C LONG	1.42 DEG	10.0		C LONG	-0.64 DEG	77.8	
D LAT	47.12 DEG			D LAT	49.15 DEG		
D LONG	-7.75 DEG			D LONG	-4.92 DEG		

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	49.05 DEG	AB	86.9 KM	A LAT	48.36 DEG	AB	86.9 KM
A LONG	-4.80 DEG	BC	22.1 KM	A LONG	-4.77 DEG	BC	22.5 KM
B LAT	49.44 DEG	CD	85.2 KM	B LAT	50.09 DEG	CD	87.5 KM
B LONG	-1.42 DEG	DA	21.2 KM	B LONG	-0.19 DEG	DA	21.5 KM
C LAT	48.73 DEG	TILT DISTANCE		C LAT	49.36 DEG	TILT DISTANCE	
C LONG	-0.64 DEG	77.8		C LONG	-0.42 DEG	81.5	
D LAT	49.15 DEG			D LAT	49.80 DEG		
D LONG	-4.92 DEG			D LONG	-4.83 DEG		

MISSION

FRAME NO.
S131TIME
YR, MO, DY
HR, MI, SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	7.63	SUN AZIM	108.36 DEG	LATITUDE	49.95 DEG
ALT RT	KM/SEC	TILT AZIM	58.83	INCID ANG	73.37 DEG	LONGITUDE	-2.58 DEG
0.2953		SWING ANG	321.15	EMISS ANG	8.69 DEG		
LAT	49.42 DEG	N.DEV.	80.95	PHASE ANG	79.22 DEG		
LONG	-3.99 DEG			ALPHA	-5.96 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	53.12 DEG	AB	210.7 KM	A LAT	52.51 DEG	AB	88.3 KM
A LONG	-7.27 DEG	BC	183.4 KM	A LONG	-4.77 DEG	BC	22.5 KM
B LAT	52.32 DEG	CD	196.2 KM	B LAT	50.09 DEG	CD	87.5 KM
B LONG	4.15 DEG	DA	163.1 KM	B LONG	-0.19 DEG	DA	21.5 KM
C LAT	46.58 DEG	TILT DISTANCE		C LAT	49.36 DEG	TILT DISTANCE	
C LONG	1.66 DEG	10.5		C LONG	-0.42 DEG	81.5	
D LAT	47.75 DEG			D LAT	49.80 DEG		
D LONG	-7.72 DEG			D LONG	-4.83 DEG		

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	52.51 DEG	AB	88.3 KM	A LAT	48.95 DEG	AB	88.3 KM
A LONG	-4.77 DEG	BC	22.5 KM	A LONG	-4.77 DEG	BC	22.5 KM
B LAT	50.09 DEG	CD	87.5 KM	B LAT	50.09 DEG	CD	87.5 KM
B LONG	-0.19 DEG	DA	21.5 KM	B LONG	-0.19 DEG	DA	21.5 KM
C LAT	49.36 DEG	TILT DISTANCE		C LAT	49.36 DEG	TILT DISTANCE	
C LONG	-0.42 DEG	81.5		C LONG	-0.42 DEG		
D LAT	49.80 DEG			D LAT	49.80 DEG		
D LONG	-4.83 DEG			D LONG	-4.83 DEG		

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MISSION/

FRAME NO.

5132 TIME 670615
 YR.MD.DY 075511.52 ALT RT C.2980 KM/SEC
 HR.MI.SEC LAT 50.03 DEG
 LONG -3.88 DEG

S/C POSITION

ALT 242.82 KM

TILT AZIM 56.68 DEG

SWING ANG 317.89 DEG

N.DEV. 80.74 DEG

S/C ORIENTATION
 TILT ANG 8.00 DEG
 SWING ANG 9.13 DEG
 PHASE ANG 79.22 DEG
 ALPHA +5.88 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	E3.46 DEG	AB 215.3 KM
A LONG	-7.26 DEG	BC 183.7 KM
B LAT	E3.01 DEG	CD 198.5 KM
B LONG	4.59 DEG	DA 165.9 KM
C LAT	47.39 DEG	TILT DISTANCE
C LONG	1.51 DEG	11.1
D LAT	48.88 DEG	
D LONG	-7.69 DEG	

PHOTO ILLUMINATION
 SUN AZIM 108.69 DEG.
 INCID ANG 73.47 DEG
 EMISS ANG 9.13 DEG
 PHASE ANG 79.22 DEG
 ALPHA +5.88 DEG

MISSION/

FRAME NO.

5133 TIME 670615
 YR.MD.DY 105416.34 ALT RT 0.0660 KM/SEC
 HR.MI.SEC LAT 11.47 DEG
 LONG -10.07 DEG

S/C POSITION

ALT 103.34 KM

TILT AZIM 271.85 DEG

SWING ANG 177.40 DEG

N.DEV. 85.72 DEG

PHOTO ILLUMINATION
 SUN AZIM 92.21 DEG
 INCID ANG 72.20 DEG
 EMISS ANG 11.88 DEG
 PHASE ANG 60.32 DEG
 ALPHA 11.86 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT	12.54 DEG	AB 89.4 KM
A LONG	-12.31 DEG	BC 67.4 KM
B LAT	12.51 DEG	CD 90.9 KM
B LONG	-5.32 DEG	DA 80.5 KM
C LAT	10.29 DEG	TILT DISTANCE
C LONG	-5.50 DEG	16.9
D LAT	10.29 DEG	
D LONG	-12.51 DEG	

PHOTO ILLUMINATION
 SUN AZIM 108.69 DEG.
 INCID ANG 73.47 DEG
 EMISS ANG 9.13 DEG
 PHASE ANG 79.22 DEG
 ALPHA +5.88 DEG

PHOTO ILLUMINATION
 SUN AZIM 92.21 DEG
 INCID ANG 72.20 DEG
 EMISS ANG 11.88 DEG
 PHASE ANG 60.32 DEG
 ALPHA 11.86 DEG

HIGH RESOLUTION

A LAT	51.18 DEG	SIDE LENGTH
A LONG	-4.60 DEG	AB 89.7 KM
B LAT	50.75 DEG	BC 22.9 KM
B LONG	3.05 DEG	CD 88.8 KM
C LAT	50.01 DEG	DA 21.9 KM
C LONG	-0.20 DEG	TILT DISTANCE
D LAT	50.46 DEG	85.5
D LONG	-4.73 DEG	

PHOTO ILLUMINATION
 SUN AZIM 11.50 DEG
 INCID ANG 10.76 DEG
 EMISS ANG 9.9 KM
 PHASE ANG 60.32 DEG
 ALPHA 20.5

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MISSION/
FRAME NO.

5134 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 104.69 KM TILT ANG 11.20 DEG SUN AZIM 92.60 DEG LATITUDE 12.66 DEG
 HR, MI, SEC ALT RT 0.0736 KM/SEC TILT AZIM 277.46 DEG INCID ANG -11.35 DEG LONGITUDE -10.67 DEG
 LAT 12.57 DEG SWING ANG 183.09 DEG EMISS ANG 11.88 DEG
 LONG -9.98 DEG N.DEV. 85.95 DEG PHASE ANG 60.32 DEG
 ALPHA - 11.84 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 14.14 DEG	AB 91.3 KM	A LAT 12.88 DEG	AB 39.4 KM
A LONG -12.87 DEG	BC 68.3 KM	A LONG -11.35 DEG	BC 9.3 KM
B LAT 13.70 DEG	CD 90.4 KM	B LAT 12.77 DEG	CD 39.4 KM
B LONG -9.20 DEG	DA 81.5 KM	B LONG -10.02 DEG	DA 10.0 KM
C LAT 11.45 DEG	TILT DISTANCE 16.0	C LAT 12.46 DEG	TILT DISTANCE 20.5
C LONG -9.39 DEG		C LONG -10.05 DEG	
D LAT 11.45 DEG		D LAT 12.55 DEG	
D LONG -12.43 DEG		D LONG -11.38 DEG	

MISSION/
FRAME NO.

5135 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 105.455.49 KM TILT ANG 11.31 DEG SUN AZIM 93.02 DEG LATITUDE 13.88 DEG
 HR, MI, SEC ALT RT 0.0815 KM/SEC TILT AZIM 283.24 DEG INCID ANG 72.13 DEG LONGITUDE -10.58 DEG
 LAT 13.72 DEG SWING ANG 188.97 DEG EMISS ANG 12.01 DEG
 LONG -9.88 DEG N.DEV. 86.17 DEG PHASE ANG 60.32 DEG
 ALPHA - 11.80 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 15.29 DEG	AB 93.5 KM	A LAT 14.10 DEG	AB 40.1 KM
A LONG -12.23 DEG	BC 69.4 KM	A LONG -11.26 DEG	BC 9.5 KM
B LAT 14.94 DEG	CD 91.1 KM	B LAT 13.99 DEG	CD 39.9 KM
B LONG -9.07 DEG	DA 82.9 KM	B LONG -9.92 DEG	DA 10.2 KM
C LAT 12.66 DEG	TILT DISTANCE 16.1	C LAT 13.68 DEG	TILT DISTANCE 21.7
C LONG -5.27 DEG		C LONG -9.95 DEG	
D LAT 12.46 DEG		D LAT 13.76 DEG	
D LONG -12.35 DEG		D LONG -11.30 DEG	

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 12.88 DEG AB 39.4 KM
 A LONG -11.35 DEG BC 9.3 KM
 B LAT 12.77 DEG CD 39.4 KM
 B LONG -10.02 DEG DA 10.0 KM
 C LAT 12.46 DEG TILT DISTANCE 20.5
 C LONG -10.05 DEG
 D LAT 12.55 DEG
 D LONG -11.38 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 14.10 DEG AB 40.1 KM
 A LONG -11.26 DEG BC 9.5 KM
 B LAT 13.99 DEG CD 39.9 KM
 B LONG -9.92 DEG DA 10.2 KM
 C LAT 13.68 DEG TILT DISTANCE 21.7
 C LONG -9.95 DEG
 D LAT 13.76 DEG
 D LONG -11.30 DEG

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MISSION/
FRAME NO.5136
YR, MO, DY
HR, MI, SEC
10516.48
10516.48

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	11.54 DEG	SUN AZIM	93.45 DEG	LATITUDE	15.15 DEG
0.0897	KM/SEC	TILT AZIM	289.08 DEG	INCID ANG	72.11 DEG	LONGITUDE	-10.49 DEG
14.91	DEG	SWING ANG	194.90 DEG	EMISS ANG	12.27 DEG		
-9.78	DEG	N.DEV.	86.41 DEG	PHASE ANG	50.32 DEG		
LONG				ALPHA	11.75 DEG		

MISSION/
FRAME NO.5137
YR, MO, DY
HR, MI, SEC
171445.61
171445.61

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	13.40 DEG	SUN AZIM	90.54 DEG	LATITUDE	6.60 DEG
0.0311	KM/SEC	TILT AZIM	277.71 DEG	INCID ANG	72.84 DEG	LONGITUDE	-14.75 DEG
6.50	DEG	SWING ANG	183.32 DEG	EMISS ANG	14.18 DEG		
-13.97	DEG	N.DEV.	85.93 DEG	PHASE ANG	58.78 DEG		
LONG				ALPHA	14.05 DEG		

MISSION/
FRAME NO.5138
YR, MO, DY
HR, MI, SEC
171445.61
171445.61

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	11.54 DEG	SUN AZIM	93.45 DEG	LATITUDE	15.15 DEG
0.0897	KM/SEC	TILT AZIM	289.08 DEG	INCID ANG	72.11 DEG	LONGITUDE	-10.49 DEG
14.91	DEG	SWING ANG	194.90 DEG	EMISS ANG	12.27 DEG		
-9.78	DEG	N.DEV.	86.41 DEG	PHASE ANG	50.32 DEG		
LONG				ALPHA	11.75 DEG		

MISSION/
FRAME NO.

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	13.40 DEG	SUN AZIM	90.54 DEG	LATITUDE	6.60 DEG
0.0311	KM/SEC	TILT AZIM	277.71 DEG	INCID ANG	72.84 DEG	LONGITUDE	-14.75 DEG
6.50	DEG	SWING ANG	183.32 DEG	EMISS ANG	14.18 DEG		
-13.97	DEG	N.DEV.	85.93 DEG	PHASE ANG	58.78 DEG		
LONG				ALPHA	14.05 DEG		

MISSION/
FRAME NO.

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	11.54 DEG	SUN AZIM	93.45 DEG	LATITUDE	15.15 DEG
0.0897	KM/SEC	TILT AZIM	289.08 DEG	INCID ANG	72.11 DEG	LONGITUDE	-10.49 DEG
14.91	DEG	SWING ANG	194.90 DEG	EMISS ANG	12.27 DEG		
-9.78	DEG	N.DEV.	86.41 DEG	PHASE ANG	50.32 DEG		
LONG				ALPHA	11.75 DEG		

MISSION/
FRAME NO.5139
YR, MO, DY
HR, MI, SEC
171445.61
171445.61

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	13.40 DEG	SUN AZIM	90.54 DEG	LATITUDE	6.60 DEG
0.0311	KM/SEC	TILT AZIM	277.71 DEG	INCID ANG	72.84 DEG	LONGITUDE	-14.75 DEG
6.50	DEG	SWING ANG	183.32 DEG	EMISS ANG	14.18 DEG		
-13.97	DEG	N.DEV.	85.93 DEG	PHASE ANG	58.78 DEG		
LONG				ALPHA	14.05 DEG		

MISSION/
FRAME NO.

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	11.54 DEG	SUN AZIM	93.45 DEG	LATITUDE	15.15 DEG
0.0897	KM/SEC	TILT AZIM	289.08 DEG	INCID ANG	72.11 DEG	LONGITUDE	-10.49 DEG
14.91	DEG	SWING ANG	194.90 DEG	EMISS ANG	12.27 DEG		
-9.78	DEG	N.DEV.	86.41 DEG	PHASE ANG	50.32 DEG		
LONG				ALPHA	11.75 DEG		

MISSION/
FRAME NO.5140
YR, MO, DY
HR, MI, SEC
171445.61
171445.61

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	13.40 DEG	SUN AZIM	90.54 DEG	LATITUDE	6.60 DEG
0.0311	KM/SEC	TILT AZIM	277.71 DEG	INCID ANG	72.84 DEG	LONGITUDE	-14.75 DEG
6.50	DEG	SWING ANG	183.32 DEG	EMISS ANG	14.18 DEG		
-13.97	DEG	N.DEV.	85.93 DEG	PHASE ANG	58.78 DEG		
LONG				ALPHA	14.05 DEG		

MISSION/
FRAME NO.

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	KM	TILT ANG	11.54 DEG	SUN AZIM	93.45 DEG	LATITUDE	15.15 DEG
0.0897	KM/SEC	TILT AZIM	289.08 DEG	INCID ANG	72.11 DEG	LONGITUDE	-10.49 DEG
14.91	DEG	SWING ANG	194.90 DEG	EMISS ANG	12.27 DEG		
-9.78	DEG	N.DEV.	86.41 DEG	PHASE ANG	50.32 DEG		
LONG				ALPHA	11.75 DEG		

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MISSION/

FRAME NO.

TIME
YR.MO.DY
HR.MI.SECS/C POSITION
ALT RT -3.0659 KM/SEC
LAT -7.40 DEG
LONG -16.86 DFG

MISSION/

FRAME NO.

TIME
YR.MO.DY
HR.MI.SECS/C POSITION
ALT 104.04 KM
ALT AZIM 158.99 DEG
SWING ANG 64.49 DEG
N.DEV. 95.51 DEG

MISSION/

FRAME NO.

TIME
YR.MO.DY
HR.MI.SECS/C POSITION
ALT 103.73 KM
ALT RT -0.0640 KM/SEC
LAT -7.13 DEG
LONG -16.84 DEG

MISSION/

FRAME NO.

TIME
YR.MO.DY
HR.MI.SECS/C POSITION
ALT 84.6 KM
ALT AZIM 153.31 DEG
SWING ANG 58.81 DEG
N.DEV. 85.51 DEG

MISSION/

FRAME NO.

TIME
YR.MO.DY
HR.MI.SECS/C POSITION
ALT 84.6 KM
ALT AZIM 153.31 DEG
SWING ANG 58.81 DEG
N.DEV. 85.51 DEG

MISSION/

FRAME NO.

TIME
YR.MO.DY
HR.MI.SECS/C POSITION
ALT 84.6 KM
ALT AZIM 153.31 DEG
SWING ANG 58.81 DEG
N.DEV. 85.51 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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S/C ORIENTATION
TILT ANG 1.45 DEG
TILT AZIM 73.73 DEG
SWING ANG 1.54 DEG
N.DEV. 74.19 DEG
ALPHA -0.47 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT -6.19 DEG AB 84.8 KM
A LONG -18.14 DEG BC 72.5 KM
B LAT -6.40 DEG CD 86.2 KM
B LONG -18.34 DEG DA 72.1 KM
C LAT -8.79 DEG TILT DISTANCE 1.9
C LONG -15.49 DEG
D LAT -8.56 DEG
D LONG -18.36 DEGPHOTO ILLUMINATION
SUN AZIM 86.38 DEG
INCID ANG 73.68 DEG
EMISS ANG 1.28 DEG
PHASE ANG 74.19 DEG
ALPHA -0.51 DEGPRINCIPAL POINT
LATITUDE -7.48 DEG
LONGITUDE -16.83 DEGPHOTO ILLUMINATION
SUN AZIM 86.38 DEG
INCID ANG 73.68 DEG
EMISS ANG 1.28 DEG
PHASE ANG 74.19 DEG
ALPHA -0.51 DEGPRINCIPAL POINT
LATITUDE -7.19 DEG
LONGITUDE -16.80 DEGPHOTO ILLUMINATION
SUN AZIM 86.38 DEG
INCID ANG 73.68 DEG
EMISS ANG 1.28 DEG
PHASE ANG 74.19 DEG
ALPHA -0.51 DEGPRINCIPAL POINT
LATITUDE -7.19 DEG
LONGITUDE -16.80 DEGPHOTO ILLUMINATION
SUN AZIM 86.38 DEG
INCID ANG 73.68 DEG
EMISS ANG 1.28 DEG
PHASE ANG 74.19 DEG
ALPHA -0.51 DEGPRINCIPAL POINT
LATITUDE -7.19 DEG
LONGITUDE -16.80 DEG

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MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SEC

		S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
5142	67CE15	ALT 105.77 KM	TILT ANG .8.48 DEG	SUN AZIM 92.78 DEG	LATITUDE 12.67 DEG
	233E40.12	ALT RT 0.0743 KM/SEC	TILT AZIM 99.30 DEG	INCID ANG 71.45 DEG	LONGITUDE -16.41 DEG
		LAT 12.76 DEG	SWING ANG 4.18 DEG	EMISS ANG 9.01 DEG	
		LONG -16.94 DEG	N.DEV. 84.98 DEG	PHASE ANG 80.40 DEG	
				ALPHA -8.95 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION	
A LAT	12.55 DEG	AB 89.1 KM	A LAT	12.88 DEG
A LONG	-17.72 DEG	BC 79.5 KM	A LONG	-17.04 DEG
B LAT	13.83 DEG	CD 89.9 KM	B LAT	12.77 DEG
B LONG	-14.79 DEG	DA 69.9 KM	B LONG	-15.72 DEG
C LAT	11.22 DEG	TILT DISTANCE 11.7	C LAT	12.45 DEG
C LONG	-14.54 DEG		C LONG	-15.75 DEG
D LAT	11.65 DEG		D LAT	12.57 DEG
D LONG	-17.93 DEG		D LONG	-17.07 DEG

MISSION/
FRAME NO.TIME
YR, MO, DY
HR, MI, SEC

		S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
5143	67CE15	ALT 107.29 KM	TILT ANG 8.47 DEG	SUN AZIM 93.20 DEG	LATITUDE 13.85 DEG
	233E55.56	ALT RT 0.0819 KM/SEC	TILT AZIM 91.82 DEG	INCID ANG 71.40 DEG	LONGITUDE -16.30 DEG
		LAT 13.87 DEG	SWING ANG 356.50 DEG	EMISS ANG 9.00 DEG	
		LONG -16.85 DEG	N.DEV. 84.67 DEG	PHASE ANG 80.40 DEG	
				ALPHA -8.99 DEG	

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH	HIGH RESOLUTION	
A LAT	15.15 DEG	AB 91.1 KM	A LAT	14.07 DEG
A LONG	-17.64 DEG	BC 80.6 KM	A LONG	-15.94 DEG
B LAT	15.04 DEG	CD 90.5 KM	B LAT	13.95 DEG
B LONG	-14.53 DEG	DA 70.9 KM	B LONG	-15.60 DEG
C LAT	12.39 DEG	TILT DISTANCE 11.7	C LAT	13.62 DEG
C LONG	-14.82 DEG		C LONG	-15.63 DEG
D LAT	12.82 DEG		D LAT	13.75 DEG
D LONG	-17.84 DEG		D LONG	-16.97 DEG

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MISSION/

FRAME NO.

5144

YR.MD.DY

67CE15

HR.MI.SEC

233515.74

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	TILT ANG	B.60 DEG	SUN AZIM	93.64 DEG	LATITUDE	15.06 DEG
67CE15	109.02 KM	TILT AZIM	84.28 DEG	INCID ANG	71.36 DEG	LONGITUDE	-16.19 DEG
	0.0897 KM/SEC	SWING ANG	348.94 DEG	EMISS ANG	9.15 DEG		
	LAT 15.01 DEG	N.DEV.	84.45 DEG	PHASE ANG	80.40 DEG		
	LONG -16.75 DEG			ALPHA	-9.04 DEG		

MISSION/

5145

YR.MD.DY

67CE15

HR.MI.SEC

233940.30

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	TILT ANG	B.89 DEG	SUN AZIM	94.09 DEG	LATITUDE	16.30 DEG
67CE15	110.94 KM	TILT AZIM	76.94 DEG	INCID ANG	71.33 DEG	LONGITUDE	-16.07 DEG
	0.0976 KM/SEC	SWING ANG	341.49 DEG	EMISS ANG	9.47 DEG		
	LAT 16.17 DEG	N.DEV.	84.22 DEG	PHASE ANG	80.40 DEG		
	LONG -16.65 DEG			ALPHA	-9.09 DEG		

MISSION/

5145

YR.MD.DY

67CE15

HR.MI.SEC

233940.30

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	TILT ANG	B.89 DEG	SUN AZIM	94.09 DEG	LATITUDE	16.30 DEG
67CE15	110.94 KM	TILT AZIM	76.94 DEG	INCID ANG	71.33 DEG	LONGITUDE	-16.07 DEG
	0.0976 KM/SEC	SWING ANG	341.49 DEG	EMISS ANG	9.47 DEG		
	LAT 16.17 DEG	N.DEV.	84.22 DEG	PHASE ANG	80.40 DEG		
	LONG -16.65 DEG			ALPHA	-9.09 DEG		

MISSION/

5145

YR.MD.DY

67CE15

HR.MI.SEC

233940.30

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	TILT ANG	B.89 DEG	SUN AZIM	94.09 DEG	LATITUDE	16.30 DEG
67CE15	110.94 KM	TILT AZIM	76.94 DEG	INCID ANG	71.33 DEG	LONGITUDE	-16.07 DEG
	0.0976 KM/SEC	SWING ANG	341.49 DEG	EMISS ANG	9.47 DEG		
	LAT 16.17 DEG	N.DEV.	84.22 DEG	PHASE ANG	80.40 DEG		
	LONG -16.65 DEG			ALPHA	-9.09 DEG		

MISSION/

5145

YR.MD.DY

67CE15

HR.MI.SEC

233940.30

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
TIME	ALT	TILT ANG	B.89 DEG	SUN AZIM	94.09 DEG	LATITUDE	16.30 DEG
67CE15	110.94 KM	TILT AZIM	76.94 DEG	INCID ANG	71.33 DEG	LONGITUDE	-16.07 DEG
	0.0976 KM/SEC	SWING ANG	341.49 DEG	EMISS ANG	9.47 DEG		
	LAT 16.17 DEG	N.DEV.	84.22 DEG	PHASE ANG	80.40 DEG		
	LONG -16.65 DEG			ALPHA	-9.09 DEG		

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MISSION/
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 100°78 KH ALT RT 0.0308 KM/SEC LAT 6.50 DEG LONG -19.20 DEG	TILT ANG 15.49 DEG TILT AZIM 94.37 DEG SWING ANG 359.85 DEG N-DEV. 85.56. DEG	SUN AZIM 90.64 DEG INCID ANG 71.51 DEG EMIS ANG 16.41 DEG PHASE ANG 87.89 DEG ALPHA -16.38 DEG	LATITUDE 6.43 DEG LONGITUDE -18.27 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 7.61 DEG A LONG -19.51 DEG B LAT 7.67 DEG B LONG -16.46 DEG C LAT 4.94 DEG C LONG -16.69 DEG D LAT 5.48 DEG D LONG -15.58 DEG	AB 91.7 KM BC 82.9 KM CD 91.5 KM DA 65.0 KM TIILT DISTANCE 21.9	A LAT 7.91 DEG A LONG -15.49 DEG B LAT 7.97 DEG B LONG -16.43 DEG C LAT 5.24 DEG C LONG -16.67 DEG D LAT 5.77 DEG D LONG -15.65 DEG	AB 92.0 KM BC 83.0 KM CD 91.5 KM DA 65.1 KM TIILT DISTANCE 21.9	A LAT 6.63 DEG A LONG -18.88 DEG B LAT 6.54 DEG B LONG -17.57 DEG C LAT 6.21 DEG C LONG -17.60 DEG D LAT 6.33 DEG D LONG -18.90 DEG

MISSION/
FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT 100.94 KH ALT RT 0.0328 KM/SEC LAT 6.78 DEG LONG -19.18 DEG	TILT ANG 15.49 DEG TILT AZIM 93.36 DEG SWING ANG 358.80 DEG N-DEV. 85.47 DEG	SUN AZIM 90.74 DEG INCID ANG 71.49 DEG EMIS ANG 16.42 DEG PHASE ANG 87.89 DEG ALPHA -16.40 DEG	LATITUDE 6.73 DEG LONGITUDE -18.25 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT 7.91 DEG A LONG -15.49 DEG B LAT 7.97 DEG B LONG -16.43 DEG C LAT 5.24 DEG C LONG -16.67 DEG D LAT 5.77 DEG D LONG -15.65 DEG	AB 92.0 KM BC 83.0 KM CD 91.5 KM DA 65.1 KM TIILT DISTANCE 21.9	A LAT 6.92 DEG A LONG -18.85 DEG B LAT 6.84 DEG B LONG -17.54 DEG C LAT 6.51 DEG C LONG -17.57 DEG D LAT 6.63 DEG D LONG -18.88 DEG	AB 39.6 KM BC 10.0 KM CD 39.5 KM DA 9.0 KM TIILT DISTANCE 68.7	

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MISSION/
FRAME NO.

S148 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY 670816 ALT RT 101°09' KM TILT ANG 15°50' DEG SUN AZIM 90°84' DEG LATITUDE 7°0' DEG
 HR. MIN. SEC 024759.85 ALT RT 0.3346 KM/SEC TILT AZIM 92°40' DEG INCID ANG 71°47' DFG LONGITUDE -19.22 DFG
 LAT 7.05 DEG SWING ANG 357°89' DEG EMISS ANG 15°43' DEG
 LONG -19.15 DEG N.DEV. 85.39 DEG PHASE ANG 87°39' DEG
 ALPHA -16.42 DEG

MISSION/
FRAME NO.

S149 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY 670816 ALT RT 101°25' KM TILT ANG 15°51' DEG SUN AZIM 90°94' DEG LATITUDE 7°26' DEG
 HR. MIN. SEC 0248 4.33 ALT RT 0.3364 KM/SEC TILT AZIM 91°47' DEG INCID ANG 71°45' DFG LONGITUDE -18.29 DFG
 LAT 7.31 DEG SWING ANG 356°84' DEG EMISS ANG 15°34' DEG
 LONG -19.13 DEG N.DEV. 85.31 DEG PHASE ANG 87°89' DEG
 ALPHA -16.44 DEG

MISSION/
FRAME NO.

S149 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY 670816 ALT RT 101°25' KM TILT ANG 15°51' DEG SUN AZIM 90°94' DEG LATITUDE 7°26' DEG
 HR. MIN. SEC 0248 4.33 ALT RT 0.3364 KM/SEC TILT AZIM 91°47' DEG INCID ANG 71°45' DFG LONGITUDE -18.29 DFG
 LAT 7.31 DEG SWING ANG 356°84' DEG EMISS ANG 15°34' DEG
 LONG -19.13 DEG N.DEV. 85.31 DEG PHASE ANG 87°89' DEG
 ALPHA -16.44 DEG

MISSION/
FRAME NO.

S149 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY 670816 ALT RT 101°25' KM TILT ANG 15°51' DEG SUN AZIM 90°94' DEG LATITUDE 7°26' DEG
 HR. MIN. SEC 0248 4.33 ALT RT 0.3364 KM/SEC TILT AZIM 91°47' DEG INCID ANG 71°45' DFG LONGITUDE -18.29 DFG
 LAT 7.31 DEG SWING ANG 356°84' DEG EMISS ANG 15°34' DEG
 LONG -19.13 DEG N.DEV. 85.31 DEG PHASE ANG 87°89' DEG
 ALPHA -16.44 DEG

MEDIUM RESOLUTION HIGH RESOLUTION MEDIUM RESOLUTION HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH
 A LAT 8.20 DEG AB 92°3' KM A LAT 7°21' DEG AB 39.6' KM A LAT 7.48 DEG AB 39.7' KM
 A LONG -15.47 DEG BC 83°2' KM A LONG -18.03' DEG BC 10.0' KM A LONG -16.81' DEG BC 10.1' KM
 B LAT 8.25 DEG CD 91°5' KM B LAT 7°12' DEG CD 39.6' KM B LAT 7.39' DEG CD 39.6' KM
 A LONG -16.39 DEG DA 65°2' KM B LONG -17.51' DEG DA 9.0' KM B LONG -17.54' DEG DA 9.0' KM
 C LAT 5.52 DEG TILT DISTANCE C LAT 6.79' DEG TILT DISTANCE C LAT 6.79' DEG TILT DISTANCE
 C LONG -16.65 DEG 21.9' C LONG -17.54' DEG 68.8' C LONG -17.54' DEG 68.8'
 D LAT 6.45 DEG D LONG -16.85' DEG D LAT 6.91' DEG D LONG -16.85' DEG
 D LONG -15.63 DEG

MEDIUM RESOLUTION HIGH RESOLUTION MEDIUM RESOLUTION HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH
 A LAT 8.20 DEG AB 92°3' KM A LAT 7°21' DEG AB 39.6' KM A LAT 7.48 DEG AB 39.7' KM
 A LONG -15.47 DEG BC 83°2' KM A LONG -18.03' DEG BC 10.0' KM A LONG -16.81' DEG BC 10.1' KM
 B LAT 8.25 DEG CD 91°5' KM B LAT 7°12' DEG CD 39.6' KM B LAT 7.39' DEG CD 39.6' KM
 A LONG -16.39 DEG DA 65°2' KM B LONG -17.51' DEG DA 9.0' KM B LONG -17.54' DEG DA 9.0' KM
 C LAT 5.52 DEG TILT DISTANCE C LAT 6.79' DEG TILT DISTANCE C LAT 6.79' DEG TILT DISTANCE
 C LONG -16.65 DEG 21.9' C LONG -17.54' DEG 68.8' C LONG -17.54' DEG 68.8'
 D LAT 6.45 DEG D LONG -16.85' DEG D LAT 6.91' DEG D LONG -16.85' DEG
 D LONG -15.63 DEG

MEDIUM RESOLUTION HIGH RESOLUTION MEDIUM RESOLUTION HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH CORNER COORDINATE SIDE LENGTH
 A LAT 8.20 DEG AB 92°3' KM A LAT 7°21' DEG AB 39.6' KM A LAT 7.48 DEG AB 39.7' KM
 A LONG -15.47 DEG BC 83°2' KM A LONG -18.03' DEG BC 10.0' KM A LONG -16.81' DEG BC 10.1' KM
 B LAT 8.25 DEG CD 91°5' KM B LAT 7°12' DEG CD 39.6' KM B LAT 7.39' DEG CD 39.6' KM
 A LONG -16.39 DEG DA 65°2' KM B LONG -17.51' DEG DA 9.0' KM B LONG -17.54' DEG DA 9.0' KM
 C LAT 5.52 DEG TILT DISTANCE C LAT 6.79' DEG TILT DISTANCE C LAT 6.79' DEG TILT DISTANCE
 C LONG -16.65 DEG 21.9' C LONG -17.54' DEG 68.8' C LONG -17.54' DEG 68.8'
 D LAT 6.45 DEG D LONG -16.85' DEG D LAT 6.91' DEG D LONG -16.85' DEG
 D LONG -15.63 DEG

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FRAME NO.

S150 YR-MO-DY 670616 TIME S/C POSITION
 HR-MI-SEC 055537.30 ALT RT 102.91 KM TILT ANG 5.19 DEG
 LAT 0.0494 KM/SEC TILT AZIM 99.23 DEG INCID ANG 72.08 DEG
 LONG 9.25 DEG SWING ANG 4.24 CEG EMISS ANG 5.50 DEG
 -20.72 DEG N.DEV. 85.00 CEG PHASE ANG 77.53 DEG
 ALPHA -5.45 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 10.46 DEG AB 85.2 KM
 A LONG -21.69 DEG BC 74.7 KM
 B LAT 10.30 DEG CD 85.6 KM
 B LONG -16.83 DEG DA 69.1 KM
 C LAT 7.85 DEG TILT DISTANCE 7.0
 C LONG -15.05 DEG
 D LAT 8.19 DEG
 D LONG -21.88 DEG

S/C POSITION
 ALT RT 102.91 KM TILT ANG 5.19 DEG
 LAT 0.0494 KM/SEC TILT AZIM 99.23 DEG INCID ANG 72.08 DEG
 LONG 9.25 DEG SWING ANG 4.24 CEG EMISS ANG 5.50 DEG
 -20.72 DEG N.DEV. 85.00 CEG PHASE ANG 77.53 DEG
 ALPHA -5.45 DEG

MISSION RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 9.40 DEG AB 37.4 KM
 A LONG -21.01 DEG BC 9.5 KM
 B LAT 9.30 DEG CD 37.4 KM
 B LONG -19.77 DEG DA 9.2 KM
 C LAT 8.99 DEG TILT DISTANCE 55.3
 C LONG -19.79 DEG
 D LAT 9.10 DEG
 D LONG -21.04 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.48 DEG LATITUDE 9.20 DEG
 INCID ANG 72.08 DEG LONGITUDE -20.41 DEG

S/C POSITION
 ALT RT 103.15 KM TILT ANG 5.18 DEG
 LAT 0.0513 KM/SEC TILT AZIM 96.19 DEG INCID ANG 72.06 DEG
 LONG 9.52 DEG SWING ANG 1.18 DEG EMISS ANG 5.49 DEG
 -20.70 DEG N.DEV. 84.97 DEG PHASE ANG 77.53 DEG
 ALPHA -5.47 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.58 DEG LATITUDE 9.49 DEG
 INCID ANG 72.06 DEG LONGITUDE -20.39 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT 10.75 DEG AB 85.6 KM
 A LONG -21.67 DEG BC 74.9 KM
 B LAT 10.60 DEG CD 85.7 KM
 B LONG -16.80 DEG DA 69.3 KM
 C LAT 8.14 DEG TILT DISTANCE 7.0
 C LONG -19.03 DEG
 D LAT 8.48 DEG
 D LONG -21.86 DEG

CORNER COORDINATE SIDE LENGTH
 A LAT 9.69 DEG AB 37.5 KM
 A LONG -20.99 DEG BC 9.5 KM
 B LAT 9.59 DEG CD 37.5 KM
 B LONG -19.74 DEG DA 9.2 KM
 C LAT 9.28 DEG TILT DISTANCE 55.1
 C LONG -19.77 DEG
 D LAT 9.39 DEG
 D LONG -21.01 DEG

MISSION/
FRAME NO.

S151 YR-MO-DY 670616 TIME S/C POSITION
 HR-MI-SEC 055542.12 ALT RT 103.15 KM TILT ANG 5.18 DEG
 LAT 0.0513 KM/SEC TILT AZIM 96.19 DEG INCID ANG 72.06 DEG
 LONG 9.52 DEG SWING ANG 1.18 DEG EMISS ANG 5.49 DEG
 -20.70 DEG N.DEV. 84.97 DEG PHASE ANG 77.53 DEG
 ALPHA -5.47 DEG

PHOTO ILLUMINATION PRINCIPAL POINT
 SUN AZIM 91.58 DEG LATITUDE 9.49 DEG
 INCID ANG 72.06 DEG LONGITUDE -20.39 DEG

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FRAME NO.

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
5152	YR. MO. DY 055546.92	ALT RT LAT LONG	103°40' KM 9°80' DEG -20.68 DEG	TILT ANG 5°18' DEG TILT AZIM 93°16' DEG SWING ANG 358°13' DEG N.DEV.	SUN AZIM 91°58' DEG INCID ANG 72°04' DEG EMISS ANG 5°49' DEG PHASE ANG 77°53' DEG ALPHA -5.49 DEG

MISSION/

MISSION/

	SIDE LENGTH	CORNER COORDINATE	HIGH RESOLUTION
5152	AB 85.9 KM	A LAT 11°05' DEG A LONG -21°65' DEG	A LAT 9.99 DEG A LONG -20°97' DEG
	BC 75.0 KM	B LAT 10°89' DEG B LONG -10°76' DEG	B LAT 9.88 DEG B LONG -19°71' DEG
	CD 85.7 KM	C LAT 8.43 DEG C LONG -19.00 DEG	C LAT 9.57 DEG C LONG -19°74' DEG
	DA 69.5 KM	D LAT 8.77 DEG D LONG -21.84 DEG	D LAT 9.68 DEG D LONG -20°99' DEG
	TILT DISTANCE 7.0		

MISSION/

MISSION/

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
5153	YR. MO. DY 055551.72	ALT RT LAT LONG	103°66' KM 0°C551 KM/SEC 10.07 DEG -20.65 DEG	TILT ANG 5°19' DEG TILT AZIM 90°14' DEG SWING ANG 355°39' DEG N.DEV.	SUN AZIM 91°78' DEG INCID ANG 72°03' DEG EMISS ANG 5°50' DEG PHASE ANG 77°53' DEG ALPHA -5.50 DEG

	SIDE LENGTH	CORNER COORDINATE	HIGH RESOLUTION
5153	AB 86.3 KM	A LAT 11°35' DEG A LONG -21°63' DEG	A LAT 10°28' DEG A LONG -20°94' DEG
	BC 75.2 KM	B LAT 11°19' DEG B LONG -16°73' DEG	B LAT 10°17' DEG B LONG -19°68' DEG
	CD 85.8 KM	C LAT E.72 DEG C LONG -18°57' DEG	C LAT 9.86 DEG C LONG -19°71' DEG
	DA 69.6 KM	D LAT 5.05 DEG D LONG -21°82' DEG	D LAT 9.97 DEG D LONG -20°97' DEG
	TILT DISTANCE 7.9		

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MISSION/
FRAME NO.

5154 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 103°.93 KM TILT ANG 5.22 DEG SUN AZIM 91°.87 DEG LATITUDE 10°.36 DEG
 HR, MI, SEC ALT RT 0.0569 KM/SEC TILT AZIM 87°.S DEG INCID ANG 72°.01 DEG LONGITUDE -20.31 DEG
 LAT 10°.35 DEG SWING ANG 352.09 DEG EMISS ANG 5.54 DEG
 LONG -20°.63 DEG N.DEV. 84°.87 DEG PHASE ANG 77°.53 DEG
 ALPHA -5.52 DEG

MEDIUM RESOLUTION CORNER COORDINATE SIDE LENGTH
 A LAT 11°.64 DEG AB 86.7 KM
 A LONG -21°.61 DEG BC 75.5 KM
 B LAT 11°.48 DEG CD 85.9 KM
 B LONG -18°.69 DEG DA 69.8 KM
 C LAT 9.01 DEG TILT DISTANCE 7.1
 C LONG -18°.55 DEG
 D LAT 9.34 DEG
 D LONG -21.79 DEG

HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH
 A LAT 12°.57 DEG AB 37.8 KM
 A LONG -20°.92 DEG BC 9.6 KM
 B LAT 10°.46 DEG CD 37.8 KM
 B LONG -19.65 DEG DA 9.3 KM
 C LAT 10.15 DEG C LONG -19.69 DEG TILT DISTANCE 55.6
 D LAT 10.26 DEG D LONG -20.95 DEG

MISSION/
FRAME NO.
 5155 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 104.21 KM TILT ANG 5.27 DEG SUN AZIM 91°.97 DEG LATITUDE 10°.65 DEG
 HR, MI, SEC JUN 1.28 ALT RT 0.0588 KM/SEC TILT AZIM 84.21 DEG INCID ANG 72.00 DEG LONGITUDE -20.29 DEG
 LAT 10.62 DEG SWING ANG 349.13 DEG EMISS ANG 5.58 DEG
 LONG -20.61 DEG N.DEV. 84.84 DEG PHASE ANG 77.53 DEG
 ALPHA -5.54 DEG

MEDIUM RESOLUTION CORNER COORDINATE SIDE LENGTH
 A LAT 11.94 DEG AB 87.1 KM
 A LONG -21.59 DEG BC 75.7 KM
 B LAT 11.78 DEG CD 85.9 KM
 B LONG -18.66 DEG DA 70.0 KM
 C LAT 9.29 DEG TILT DISTANCE 7.1
 C LONG -18.92 DEG
 D LAT 9.63 DEG
 D LONG -21.77 DEG

HIGH RESOLUTION CORNER COORDINATE SIDE LENGTH
 A LAT 10.86 DEG AB 37.9 KM
 A LONG -20°.90 DEG BC 9.6 KM
 B LAT 10.75 DEG CD 37.9 KM
 B LONG -19.63 DEG DA 9.3 KM
 C LAT 10.43 DEG C LONG -19.66 DEG TILT DISTANCE 56.1
 D LAT 10.55 DEG D LONG -20.92 DEG

MISSION/
FRAME NO.
 5156 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY ALT 104.21 KM TILT ANG 5.27 DEG SUN AZIM 91°.97 DEG LATITUDE 10°.65 DEG
 HR, MI, SEC ALT RT 0.0588 KM/SEC TILT AZIM 84.21 DEG INCID ANG 72.00 DEG LONGITUDE -20.29 DEG
 LAT 10.62 DEG SWING ANG 349.13 DEG EMISS ANG 5.58 DEG
 LONG -20.61 DEG N.DEV. 84.84 DEG PHASE ANG 77.53 DEG
 ALPHA -5.54 DEG

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MISSION

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

5156 YR, MO, DY 670816 ALT 104.49 KM TILT ANG 5.32 DEG SUN AZIM 92.07 DEG LATITUDE 19.94 DEG

HR, MIN, SEC 0600C 6.04 ALT RT 0.0607 KM/SEC TILT AZIM 81.33 DEG INCID ANG 71.98 DEG LONGITUDE -20.26 DEG

LAT 10.89 DEG SWING ANG 346.24 DEG EMISS ANG 5.64 DEG

LONG -20.59 DEG N.DEV. 84.81 DEG PHASE ANG 77.53 DEG

ALPHA -5.55 DEG

MEDIUM RESOLUTION

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 12.23 DEG AB 87.5 KM

A LONG -21.57 DEG BC 75.9 KM

B LAT 12.07 DEG CD 86.3 KM

B LONG -18.62 DEG DA 70.2 KM

C LAT 9.58 DEG TILT DISTANCE 7.2

C LONG -18.89 DEG

D LAT 5.52 DEG

D LONG -21.75 DEG

CORNER COORDINATE

SIDE LENGTH

A LAT 11.15 DEG AB 38.0 KM

A LONG -20.87 DEG BC 9.7 KM

B LAT 11.04 DEG CD 38.0 KM

B LONG -19.60 DEG DA 9.3 KM

C LAT 10.72 DEG TILT DISTANCE 56.7

C LONG -19.63 DEG

D LAT 10.84 DEG

D LONG -20.90 DEG

MISSION

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

5157 YR, MO, DY 670816 ALT 104.79 KM TILT ANG 5.39 DEG SUN AZIM 92.17 DEG LATITUDE 11.23 DEG

HR, MIN, SEC 060010.80 ALT RT 0.0626 KM/SEC TILT AZIM 78.53 DEG INCID ANG 71.97 DEG LONGITUDE -20.24 DEG

LAT 11.16 DEG SWING ANG 343.42 CEG EMISS ANG 5.72 DEG

LONG -20.56 DEG N.DEV. 84.77 DEG PHASE ANG 77.53 DEG

ALPHA -5.57 DEG

MEDIUM RESOLUTION

HIGH RESOLUTION

CORNER COORDINATE

SIDE LENGTH

A LAT 11.43 DEG AB 38.2 KM

A LONG -20.85 DEG BC 9.7 KM

B LAT 11.33 DEG CD 38.1 KM

B LONG -19.57 DEG DA 9.4 KM

C LAT 11.01 DEG TILT DISTANCE 57.4

C LONG -19.61 DEG

D LAT 11.13 DEG

D LONG -20.88 DEG

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MISSION/
FRAME NO.

5158 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT 1232.98 KM TILT ANG 24.22 CEG SUN AZIM 263.23 DEG LATITUDE 37.83 DEG
 HR. MI. SEC ALT RT 0.2564 KM/SEC TILT AZIM 278.35 CEG INCID ANG 79.06 DEG LONGITUDE 126.77 DEG
 LAT 37.69 DEG SWING ANG 89.23 DEG EMISS ANG 44.55 DEG
 LONG 152.57 DEG N.DEV. 4.67 DEG PHASE ANG 123.60 DEG
 ALPHA -44.54 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 54.93 DEG AB 015.0 KM
 A LONG 150.37 DEG BC 416.2 KM
 B LAT 21.13 DEG CD 457.3 KM
 B LONG 145.52 DEG DA 241.4 KM
 C LAT 11.56 DEG TILT DISTANCE
 C LONG 120.50 DEG 35.8
 D LAT 55.64 DEG DEG
 D LONG 103.46 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 46.58 DEG AB 516.6 KM
 A LONG 128.72 DEG BC 201.5 KM
 B LAT 29.32 DEG CD 568.6 KM
 B LONG 130.55 DEG DA 199.2 KM
 C LAT 27.84 DEG TILT DISTANCE
 C LONG 123.21 DEG 73.7
 D LAT 46.42 DEG
 D LONG 119.16 DEG

MISSION/
FRAME NO.

5159 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT 155.03 KM TILT ANG 2.28 DEG SUN AZIM 99.31 DEG LATITUDE 31.82 DEG
 HR. MI. SEC ALT RT 0.1962 KM/SEC TILT AZIM 11.14 DEG INCID ANG 72.76 DEG LONGITUDE -22.16 DEG
 LAT 31.62 DEG SWING ANG 275.62 DEG EMISS ANG 2.49 DEG
 LONG -22.20 DEG N.DEV. 84.44 DEG PHASE ANG 72.86 DEG
 ALPHA -3.11 DEG

MEDIUM RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 23.83 DEG AB 130.3 KM
 A LONG -24.53 DEG BC 108.5 KM
 B LAT 33.41 DEG CD 126.0 KM
 B LONG -15.40 DEG DA 108.4 KM
 C LAT 25.86 DEG TILT DISTANCE
 C LONG -15.58 DEG 3.2
 D LAT 30.26 DEG
 D LONG -24.76 DEG

HIGH RESOLUTION
 CORNER COORDINATE SIDE LENGTH
 A LAT 32.14 DEG AB 56.0 KM
 A LONG -23.22 DEG BC 14.1 KM
 B LAT 31.96 DEG CD 55.8 KM
 B LONG -21.04 DEG DA 14.0 KM
 C LAT 31.50 DEG TILT DISTANCE
 C LONG -21.11 DEG 24.2
 D LAT 31.68 DEG
 D LONG -23.26 DEG

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MISSION/
FRAME NO.

5162 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY 57CE16 ALT RT 156.45 KM TILT ANG 2.67 DEG SUN AZIM 99.47 DEG LATITUDE 32.25 DEG
 HR. MI. SEC 122E22.91 LAT RT 0.109.5 KM TILT AZIM 10.32 DEG INCID ANG 72.79 DEG LONGITUDE -23.11 DEG
 LAT 32.01 DEG SWING ANG 274.77 DEG EMISS ANG 2.91 DEG
 LONG -22.16 DEG N.DEV. 84.42 DEG PHASE ANG 72.86 DEG
 ALPHA -0.39 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 34.28 DEG	AB 131.6 KM	A LAT 32.57 DEG	AB 56.6 KM
A LONG -24.52 DEG	BC 109.5 KM	A LONG -23.16 DEG	BC 14.2 KM
B LAT 33.86 DEG	CD 126.9 KM	B LAT 32.39 DEG	CD 56.3 KM
B LONG -16.20 DEG	DA 139.5 KM	B LONG -20.98 DEG	DA 14.2 KM
C LAT 30.27 DEG	TILT DISTANCE 3.7	C LAT 31.92 DEG	TIILT DISTANCE 28.4
C LONG -15.50 DEG		C LONG -21.05 DEG	
D LAT 20.57 DEG		D LAT 32.10 DEG	
D LONG -24.74 DEG		D LONG -23.23 DEG	

MISSION/
FRAME NO.

5161 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY 47CE16 AL1 157.95 KM TILT ANG 3.38 DEG SUN AZIM 99.64 DEG LATITUDE 32.59 DEG
 HR. MI. SEC 122E31.41 ALT RT 0.201.5 KM/SEC TILT AZIM 9.69 DEG INCID ANG 72.83 DEG LONGITUDE -22.96 DEG
 LAT 32.42 DEG SWING ANG 274.12 DEG EMISS ANG 3.36 DEG
 LONG -22.12 DEG N.DEV. 84.38 DEG PHASE ANG 72.26 DEG
 ALPHA -0.07 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 34.75 DEG	AB 133.3 KM	A LAT 33.02 DEG	AB 57.2 KM
A LONG -24.32 DEG	BC 116.8 KM	A LONG -23.15 DEG	BC 14.4 KM
B LAT 34.32 DEG	CD 127.9 KM	B LAT 32.83 DEG	CD 56.9 KM
B LONG -15.20 DEG	DA 110.5 KM	B LONG -20.92 DEG	DA 14.3 KM
C LAT 26.79 DEG	TILT DISTANCE 4.3	C LAT 32.36 DEG	TIILT DISTANCE 32.7
C LONG -15.83 DEG		C LONG -20.98 DEG	
D LAT 21.19 DEG		D LAT 32.55 DEG	
D LONG -24.73 DEG		D LONG -23.20 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH	CORNER COORDINATE	SIDE LENGTH
A LAT 33.02 DEG	AB 57.2 KM	A LAT 32.59 DEG	AB 56.6 KM
A LONG -23.15 DEG	BC 14.4 KM	A LONG -22.96 DEG	BC 14.2 KM
B LAT 32.83 DEG	CD 56.9 KM	B LAT 32.26 DEG	CD 56.3 KM
B LONG -20.92 DEG	DA 14.3 KM	B LONG -20.98 DEG	DA 14.2 KM
C LAT 32.36 DEG	TIILT DISTANCE 32.7	C LAT 32.55 DEG	TIILT DISTANCE 32.7
C LONG -20.98 DEG		D LAT 32.26 DEG	
D LAT 32.55 DEG		D LONG -23.20 DEG	

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MISSION/

FRAME NO.

5162

YR.MO.DY

670816

HR.MI.SEC

122039.21

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
A LAT	ALT RT	159.53 KM 0.2035 KM/SEC	TILT ANG 3.50 DEG TILT AZIM 9.20 DEG SWING ANG 273.61 DEG N.DEV.	SUN AZIM 99.81 DEG INCID ANG 72.86 DEG FMIS ANG 3.82 DEG PHASE ANG 72.86 DEG	LATITUDE 33.16 DEG LONGITUDE -72.01 DEG
B LAT	LONG	32.84 DEG -22.07 DEG			

MISSION/

FRAME NO.

5163

YR.MO.DY

670816

HR.MI.SEC

194258.41

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
A LAT	ALT RT	1230.74 KM 0.2566 KM/SEC	TILT ANG 24.35 DEG TILT AZIM 279.21 DEG SWING ANG 89.37 DEG N.DEV.	SUN AZIM 262.74 DEG INCID ANG 78.54 DEG FMIS ANG 44.80 DEG PHASE ANG 123.34 DEG	LATITUDE 38.34 DEG LONGITUDE 121.22 DEG
B LAT	LONG	37.62 DEG 147.19 DEG			

MISSION/

FRAME NO.

5164

YR.MO.DY

670816

HR.MI.SEC

194258.41

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
A LAT	ALT RT	1230.74 KM 0.2566 KM/SEC	TILT ANG 24.35 DEG TILT AZIM 279.21 DEG SWING ANG 89.37 DEG N.DEV.	SUN AZIM 262.74 DEG INCID ANG 78.54 DEG FMIS ANG 44.80 DEG PHASE ANG 123.34 DEG	LATITUDE 38.34 DEG LONGITUDE 121.22 DEG
B LAT	LONG	37.62 DEG 147.19 DEG			

MISSION/

FRAME NO.

5165

YR.MO.DY

670816

HR.MI.SEC

194258.41

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
A LAT	ALT RT	1230.74 KM 0.2566 KM/SEC	TILT ANG 24.35 DEG TILT AZIM 279.21 DEG SWING ANG 89.37 DEG N.DEV.	SUN AZIM 262.74 DEG INCID ANG 78.54 DEG FMIS ANG 44.80 DEG PHASE ANG 123.34 DEG	LATITUDE 38.34 DEG LONGITUDE 121.22 DEG
B LAT	LONG	37.62 DEG 147.19 DEG			

MISSION/

FRAME NO.

5166

YR.MO.DY

670816

HR.MI.SEC

194258.41

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
A LAT	ALT RT	1230.74 KM 0.2566 KM/SEC	TILT ANG 24.35 DEG TILT AZIM 279.21 DEG SWING ANG 89.37 DEG N.DEV.	SUN AZIM 262.74 DEG INCID ANG 78.54 DEG FMIS ANG 44.80 DEG PHASE ANG 123.34 DEG	LATITUDE 38.34 DEG LONGITUDE 121.22 DEG
B LAT	LONG	37.62 DEG 147.19 DEG			

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MISSION/

FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 109.19 KM 0.069 KM/SEC	TILT ANG 0.53 DEG TILT AZIM 342.44 DEG SWING ANG 247.68 DEG N.DEV. 85.24 DEG	SUN AZIM 92.37 DEG INCID ANG 73.02 DEG EMISS ANG 0.67 DEG PHASE ANG 72.75 DEG ALPHA 0.23 DEG	LATITUDE 12.56 DEG LONGITUDE -30.97 DEG
LAT 12.53 DEG LONG -30.95 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 12.55 DEG A LONG -32.40 DEG	AB 90.1 KM BC 75.7 KM
B LAT 13.70 DEG B LONG -29.35 DEG	CD 89.4 KM DA 76.1 KM
C LAT 11.21 DEG C LONG -29.58 DEG	DA 76.1 KM TILT DISTANCE 1.0
D LAT 11.44 DEG D LONG -32.58 DEG	TILT DISTANCE 1.0

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 12.78 DEG A LONG -31.62 DEG	AB 39.3 KM BC 9.9 KM
B LAT 12.67 DEG B LONG -30.29 DEG	CD 39.3 KM DA 9.9 KM
C LAT 12.35 DEG C LONG -30.32 DEG	TILT DISTANCE 6.6
D LAT 12.45 DEG D LONG -31.64 DEG	

MISSION/

FRAME NO.

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 109.54 KM 0.071 KM/SEC	TILT ANG 0.90 DEG TILT AZIM 349.42 DEG SWING ANG 254.65 DEG N.DEV. 85.23 DEG	SUN AZIM 92.47 DEG INCID ANG 73.01 DEG EMISS ANG 0.95 DEG PHASE ANG 72.79 DEG ALPHA 0.21 DEG	LATITUDE 12.86 DEG LONGITUDE -30.94 DEG
LAT 12.81 DEG LONG -30.93 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 13.08 DEG A LONG -31.59 DEG	AB 39.5 KM BC 9.9 KM
B LAT 12.97 DEG B LONG -30.26 DEG	CD 39.4 KM DA 9.9 KM
C LAT 12.65 DEG C LONG -30.29 DEG	TILT DISTANCE 9.5
D LAT 12.76 DEG D LONG -31.62 DEG	

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 13.08 DEG A LONG -31.59 DEG	AB 39.5 KM BC 9.9 KM
B LAT 12.97 DEG B LONG -30.26 DEG	CD 39.4 KM DA 9.9 KM
C LAT 12.65 DEG C LONG -30.29 DEG	TILT DISTANCE 9.5
D LAT 12.76 DEG D LONG -31.62 DEG	

PHOTO ILLUMINATION

PRINCIPAL POINT

LATITUDE

LONGITUDE

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MISSION/
 FRAME NO.

S166 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 570617 ALT 109.69 KM TILT ANG 1°17' DEG SUN AZIM 92°57' DEG LATITUDE 13°16' DEG
 HR, MI, SEC 010635.03 ALT RT 0.0734 KM/SEC TILT AZIM 353.12 DEG INCID ANG 72°99' DEG LONGITUDE -30°91' DEG
 LAT 13.09 DEG SWING ANG 258°34' DEG EMISS ANG 1°24' DEG
 LONG -30.90 DEG N.DEV. 85.23 CEG PHASE ANG 72°79' DEG
 ALPHA 0.20 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION			
A LAT 14°55' DEG	AB 91.0 KM	A LAT 13°38' DEG	AB 39.6 KM		
A LONG -32°36' DEG	BC 76.2 KM	A LONG -31°57' DEG	BC 9.9 KM		
B LAT 14°31' DEG	CD 89.6 KM	B LAT 13°27' DEG	CD 39.6 KM		
B LONG -29°27' DEG	DA 76.7 KM	B LONG -30°23' DEG	DA 10.0 KM		
C LAT 11°80' DEG	TILT DISTANCE 1.7	C LAT 12.94 DEG	TILT DISTANCE 12.4		
C LONG -29°52' DEG		C LONG -30°26' DEG			
D LAT 12°04' DEG		D LAT 13.05 DEG			
D LONG -32°54' DEG		D LONG -31.60 DEG			

MISSION/
 FRAME NO.

S167 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670617 ALT 110.26 KM TILT ANG 1°44' DEG SUN AZIM 92°67' DEG LATITUDE 13°46' DEG
 HR, MI, SEC 010639.91 ALT RT 0.0753 KM/SEC TILT AZIM 355°39' DEG INCID ANG 72°98' DEG LONGITUDE -30°89' DEG
 LAT 13.37 DEG SWING ANG 260°61' DEG EMISS ANG 1°53' DEG
 LONG -30.88 DEG N.DEV. 85.22 CEG PHASE ANG 72°79' DEG
 ALPHA 0.18 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION			
A LAT 14°87 DEG	AB 91.5 KM	A LAT 13°68' DEG	AB 39.8 KM		
A LONG -32°35' DEG	BC 76.5 KM	A LONG -31°55' DEG	BC 10.0 KM		
B LAT 14°61 DEG	CD 89.8 KM	B LAT 13°57' DEG	CD 39.7 KM		
B LONG -29°24' DEG	DA 76.9 KM	B LONG -30°20' DEG	DA 10.0 KM		
C LAT 12°10 DEG	TILT DISTANCE 2.0	C LAT 13°24' DEG	TILT DISTANCE 15.3		
C LONG -25°49' DEG		C LONG -30.23 DEG			
D LAT 12°33' DEG		D LAT 13.35 DEG			
D LONG -32°52' DEG		D LONG -31.57 DEG			

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MISSION/
FRAME NO.

5168
 YR. MD. DY 57CE17
 HR. MI. SEC 040445.41
 S/C POSITION
 ALT 169.19 KM
 ALT RT -0.2159 KM/SEC
 LAT -30.30 DEG
 LONG -36.51 DEG
 N.DEV.
 S/C ORIENTATION
 TILT ANG 9.81 DEG
 TILT AZIM 255.48 DEG
 SWING ANG 159.45 DEG
 N.DEV.
 PHASE ANG 69.75 DEG
 ALPHA 10.70 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -28.15 DEG AB 142.2 KM
 A LONG -4C.19 DEG BC 112.1 KM
 B LAT 00.54 DEG CD 149.5 KM
 B LONG -34.32 DEG DA 130.7 KM
 C LAT -22.63 DEG TILT DISTANCE 13.9
 C LONG -35.43 DEG
 D LAT -32.40 DEG
 D LONG -41.07 DEG

S/C POSITION
 ALT 105.27 KM
 ALT RT -0.3447 KM/SEC
 LAT -3.94 DEG
 LONG -35.83 DEG
 TILT ANG 7.86 DEG
 TILT AZIM 265.78 DEG
 SWING ANG 171.33 DEG
 N.DEV.
 PHASE ANG 85.47 DEG
 ALPHA 8.33 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -30.16 DEG AR 62.8 KM
 A LONG -38.79 DEG BC 15.1 KM
 B LAT -30.40 DEG CD 63.2 KM
 B LONG -36.41 DEG DA 16.1 KM
 C LAT -30.89 DEG TILT DISTANCE 05.2
 C LONG -35.47 DEG
 D LAT -30.58 DEG
 D LONG -38.88 DEG

MISSION/
FRAME NO.

5169
 YR. MD. DY 57CE17
 HR. MI. SEC 072333.32
 S/C POSITION
 ALT 105.27 KM
 ALT RT -0.3447 KM/SEC
 LAT -3.94 DEG
 LONG -35.83 DEG
 TILT ANG 7.86 DEG
 TILT AZIM 265.78 DEG
 SWING ANG 171.33 DEG
 N.DEV.
 PHASE ANG 85.47 DEG
 ALPHA 8.33 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -2.56 DEG AB 88.1 KM
 A LONG -37.75 DEG BC 69.7 KM
 B LAT -2.93 DEG CD 89.5 KM
 B LONG -34.57 DEG DA 78.8 KM
 C LAT -5.22 DEG TILT DISTANCE 11.2
 C LONG -35.62 DEG
 D LAT -5.15 DEG
 D LONG -37.59 DEG

S/C POSITION
 ALT 105.27 KM
 ALT RT -0.3447 KM/SEC
 LAT -3.94 DEG
 LONG -35.83 DEG
 TILT ANG 7.86 DEG
 TILT AZIM 265.78 DEG
 SWING ANG 171.33 DEG
 N.DEV.
 PHASE ANG 85.47 DEG
 ALPHA 8.33 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT -3.76 DEG AB 38.7 KM
 A LONG -36.95 DEG BC 9.4 KM
 B LAT -3.87 DEG CD 38.8 KM
 B LONG -35.67 DEG DA 9.9 KM
 C LAT -4.18 DEG TILT DISTANCE 04.0
 C LONG -35.79 DEG
 D LAT -4.09 DEG
 D LONG -35.97 DEG

S/C POSITION
 ALT 105.27 KM
 ALT RT -0.3447 KM/SEC
 LAT -3.94 DEG
 LONG -35.83 DEG
 TILT ANG 7.86 DEG
 TILT AZIM 265.78 DEG
 SWING ANG 171.33 DEG
 N.DEV.
 PHASE ANG 85.47 DEG
 ALPHA 8.33 DEG

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MISSION /
FRAME NO. -

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
676817	ALT 105.06 KM ALT RT -0.0428 KM/SEC	TI LT ANG 7.62 DEG TI LT AZIM 267.79 DEG SWING ANG 173.36 DEG N.DEV. -35.80 DEG	SUN AZIM 87.55 DEG INCID ANG 75.17 DEG EMISS ANG 8.30 DEG PHASE ANG 65.87 DEG	LATITUDE -3.68 DEG LONGITUDE -36.28 DEG
072338.2C	LAT -3.65 DEG LONG -35.80 DEG			ALPHA 8.30 DEG

MEDIUM RESOLUTION		SIZE LENGTH
CORNER	COORDINATE	
A LAT	-2°.27 DEG	AB 88.1 K
A LONG	-37°.73 DEG	BC 69.5 K
B LAT	-2°.63 DEG	CD 89.1 K
B LONG	-34°.84 DEG	DA 78.6 K
C LAT	-0°.92 DEG	TILT DISTANCE
C LONG	-35°.00 DEG	11.1
D LAT	-4°.85 DEG	
D LONG	-37°.95 DEG	

MISSION /
NAME NO. •
5171
YR. MO.
19 05

S/C POSITION	S/C ORIENTATION			PHOTO ILLUMINATION			PRINCIPAL POINT		
	ALT	104.86 KM	TILT ANG	7.79 DEG	SUN AZIM	87.62 DEG	LATITUDE	-3.39 DEG	
ALT RT	--0.049	KM/SEC	TILT AZIM	269.80 DEG	INCID ANG	75.13 DEG	LONGITUDE	-36.25 DEG	
LAT	-3.38	DEG	SWING ANG	175.39 DEG	FMISS ANG	8.26 DEG			
LONG.	-35.78	DEG	N.DEV.	85.56 DEG	PHASE ANG	66.87 DEG			
				ALPHA		8.26 DEG			
MEDIUM RESOLUTION									
ORDINATE	SIDE LENGTH			HIGH RESOLUTION					
-1.97 DEG	AB	89.1 KM		CORNER COORDINATE	SIDE LENGTH				
-37.70 DEG	BC	59.4 KM		A LAT	-3.17 DEG	AB	38.5 KM		
-2.34 DEG	CD	88.8 KM		A LONG	-36.89 DEG	BC	9.3 KM		
34.82 DEG	DA	78.4 KM		B LAT	-3.28 DEG	CD	38.6 KM		
-4.62 DEG	TILT DISTANCE			B LONG	-35.62 DEG	DA	9.8 KM		
34.58 DEG	11.1			C LAT	-3.59 DEG	TILT DISTANCE			
-4.55 DEG				C LONG	-35.65 DEG	83.2			
37.92 DEG				D LAT	-3.50 DEG				
				D LONG	-36.92 DEG				

MEDIUM RESOLUTION		HIGH RESOLUTION			
CORNER	COORDINATE	CORNER	COORDINATE	SIDE LENGTH	
A LAT	-1°57' DEG	AB	88.1 KM	A LAT	-3°17' DEG
A LONG	-37°70 DEG	BC	59.4 KM	A LONG	-36°89 DEG
B LAT	-2°34' DEG	CD	88.8 KM	B LAT	-3°28 DEG
B LONG	-34°62 DEG	DA	78.4 KM	B LONG	-35°62 DEG
C LAT	-4°62 DEG	TILT DISTANCE	11.1	C LAT	-3°59 DEG
C LONG	-34°58 DEG			C LONG	-35°65 DEG
D LAT	-4°55 DEG			D LAT	-3°50 DEG
D LONG	-37°62 DEG			D LONG	-36°92 DEG

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MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
S172	YR, MO, DY	670617	ALT 104.66 KM ALT RT -0.0390 KM/SEC	TIILT ANG 7.77 DEG TIILT AZIM 271.80 DEG SWING ANG 177.41 DEG N.DEV. 85.60 DEG	SUN AZIM 87.70 DEG INCID ANG 75.09 DEG EMIS ANG 8.24 DEG PHASE ANG 66.87 DEG	LATITUDE -3.10 DEG LONGITUDE -36.23 DEG
	HR, MI, SEC	072347.81	LAT -3.11 DEG LONG -35.76 DEG			

MEDIUM RESOLUTION

MISSION/ FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	PHOTO ILLUMINATION	PRINCIPAL POINT
S173	YR, MO, DY	670617	A LAT -1.68 DEG A LONG -37.68 DEG	AB 88.1 KM BC 69.2 KM	A LAT -2.88 DEG A LONG -36.87 DEG	LATITUDE 38.5 KM LONGITUDE 9.3 KM
	HR, MI, SEC	103435.11	B LAT -2.05 DEG B LONG -24.79 DEG	CD 88.5 KM DA 78.3 KM	B LAT -2.99 DEG B LONG -35.60 DEG	CD 88.5 KM DA 9.8 KM
			C LAT -4.33 DEG C LONG -34.56 DEG	TIILT DISTANCE 11.0	C LAT -3.30 DEG C LONG -35.62 DEG	TIILT DISTANCE 83.0
			D LAT -4.26 DEG D LONG -37.89 DEG	N.DEV. 86.31 DEG	D LAT -3.21 DEG D LONG -36.89 DEG	

HIGH RESOLUTION

MISSION/ FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	PHOTO ILLUMINATION	PRINCIPAL POINT
S173	YR, MO, DY	670617	ALT 105.17 KM ALT RT -0.0432 KM/SEC	TIILT ANG 17.97 DEG TIILT AZIM 97.69 DEG	SUN AZIM 87.39 DEG INCID ANG 73.73 DEG	LATITUDE -3.85 DEG LONGITUDE -36.44 DEG
	HR, MI, SEC	103435.11	LAT -3.70 DEG LONG -37.56 DEG	SWING ANG 3.51 DEG N.DEV. 86.31 DEG	EMISS ANG 19.10 DEG PHASE ANG 92.54 DEG	

MISSION/

MISSION/ FRAME NO.		TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
S173	YR, MO, DY	670617	ALT 98.4 KM ALT RT -0.0432 KM/SEC	TIILT ANG 17.97 DEG TIILT AZIM 97.69 DEG	SUN AZIM 87.39 DEG INCID ANG 73.73 DEG	LATITUDE -3.85 DEG LONGITUDE -36.44 DEG
	HR, MI, SEC	103435.11	LAT -3.70 DEG LONG -37.56 DEG	SWING ANG 3.51 DEG N.DEV. 86.31 DEG	EMISS ANG 19.10 DEG PHASE ANG 92.54 DEG	

HIGH RESOLUTION

MISSION/ FRAME NO.		TIME	CORNER COORDINATE	SIDE LENGTH	PHOTO ILLUMINATION	PRINCIPAL POINT
S173	YR, MO, DY	670617	A LAT -2.64 DEG A LONG -37.75 DEG	AB 98.4 KM BC 90.0 KM	A LAT -3.65 DEG A LONG -37.08 DEG	AB 42.4 KM BC 10.7 KM
	HR, MI, SEC	103435.11	B LAT -2.51 DEG B LONG -34.50 DEG	CD 100.1 KM DA 67.5 KM	B LAT -3.73 DEG B LONG -35.68 DEG	CD 42.5 KM DA 9.4 KM
			C LAT -5.48 DEG C LONG -34.66 DEG	TIILT DISTANCE 25.6	C LAT -4.09 DEG C LONG -35.71 DEG	TIILT DISTANCE 97.4
			D LAT -4.86 DEG D LONG -37.52 DEG	N.DEV. 86.31 DEG	D LAT -3.96 DEG D LONG -37.11 DEG	

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MISSION/
FRAME NO.

5174
YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	104.96 KM	TILT ANG 17.96 DEG	SUN AZIM 87.47 DEG	LATITUDE -3.55 DEG	
ALT RT	-0.0412 KM/SEC	TILT AZIM 95.80 DEG	INCID ANG 73.69 DEG	LONGITUDE -36.42 DEG	
LAT	-3.42 DEG	SWING ANG 2.58 DEG	EMISS ANG 19.08 DEG		
LONG	-37.54 DEG	N.DEV. 86.21 DEG	PHASE ANG 92.54 DEG		
		ALPHA -18.87 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT -2.33 DEG	AB 98.4 KM	A LAT -3.35 DEG	AB 42.3 KM	
A LONG -37.72 DEG	BC 89.8 KM	A LONG -37.06 DEG	BC 10.7 KM	
B LAT -2.21 DEG	CD 99.7 KM	B LAT -3.43 DEG	CD 42.4 KM	
B LONG -34.47 DEG	DA 67.4 KM	B LONG -35.66 DEG	DA 9.4 KM	
C LAT -5.17 DEG	TILT DISTANCE 25.6	C LAT -3.78 DEG	TILT DISTANCE 97.2	
C LONG -34.65 DEG		C LONG -35.69 DEG		
D LAT -4.55 DEG		D LAT -3.66 DEG		
D LONG -37.89 DEG		D LONG -37.08 DEG		

MISSION/
FRAME NO.

5175
YR, MO, DY
HR, MI, SEC

	TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT	104.76 KM	TILT ANG 17.95 DEG	SUN AZIM 87.56 DEG	LATITUDE -3.25 DEG	
ALT RT	-0.0392 KM/SEC	TILT AZIM 95.92 DEG	INCID ANG 73.65 DEG	LONGITUDE -36.40 DEG	
LAT	-3.13 DEG	SWING ANG 1.65 DEG	EMISS ANG 19.07 DEG		
LONG	-37.51 DEG	N.DEV. 86.12 DEG	PHASE ANG 92.54 DEG		
		ALPHA -18.90 DEG			

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION	CORNER COORDINATE	SIDE LENGTH
A LAT -2.03 DEG	AB 98.5 KM	A LAT -3.05 DEG	AB 42.3 KM	
A LONG -37.69 DEG	BC 89.6 KM	A LONG -37.04 DEG	BC 10.7 KM	
B LAT -1.91 DEG	CD 99.3 KM	B LAT -3.13 DEG	CD 42.3 KM	
B LONG -34.45 DEG	DA 67.2 KM	B LONG -35.64 DEG	DA 9.4 KM	
C LAT -4.86 DEG	TILT DISTANCE 25.6	C LAT -3.48 DEG	TILT DISTANCE 97.1	
C LONG -34.64 DEG		C LONG -35.67 DEG		
D LAT -4.25 DEG		D LAT -3.35 DEG		
D LONG -37.86 DEG		D LONG -37.06 DEG		

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MISSION/

FRAME NO.

5176

TIME

670617

YR, MO, DY

1971, 01, 02

HR, MI, SEC

103450.02

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	104.57 KM	TILT ANG	17.94 DEG	SUN AZIM	87.55 DEG	LATITUDE	+2.95 DEG
ALT RT	-0.373 KM/SEC	TILT AZIM	95.25 DEG	INCID ANG	73.62 DEG	LONGITUDE	-36.37 DEG
LAT	-2.85 DEG	SWING ANG	0.74 DEG	EMIS ANG	19.37 DEG		
LONG	-37.49 DEG	N.DEV.*	86.512 DEG	PHASE ANG	92.54 DEG		
				ALPHA	-18.93 DEG		

MISSION/

5177

TIME

670617

YR, MO, DY

1971, 01, 02

HR, MI, SEC

1341.6.91

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	130.79 KM	TILT ANG	6.84 DEG	SUN AZIM	83.89 DEG	LATITUDE	+19.03 DEG
ALT RT	-0.1441 KM/SEC	TILT AZIM	131.25 DEG	INCID ANG	77.03 DEG	LONGITUDE	-40.19 DEG
LAT	-18.69 DEG	SWING ANG	36.94 DEG	EMIS ANG	7.36 DEG		
LONG	-40.61 DEG	N.DEV.*	86.015 DEG	PHASE ANG	82.08 DEG		
				ALPHA	-5.11 DEG		

MISSION/

5177

TIME

670617

YR, MO, DY

1971, 01, 02

HR, MI, SEC

1341.6.91

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	130.79 KM	TILT ANG	6.84 DEG	SUN AZIM	83.89 DEG	LATITUDE	+19.03 DEG
ALT RT	-0.1441 KM/SEC	TILT AZIM	131.25 DEG	INCID ANG	77.03 DEG	LONGITUDE	-40.19 DEG
LAT	-18.69 DEG	SWING ANG	36.94 DEG	EMIS ANG	7.36 DEG		
LONG	-40.61 DEG	N.DEV.*	86.015 DEG	PHASE ANG	82.08 DEG		
				ALPHA	-5.11 DEG		

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -18.69 DEG AB 126.4 KM
A LONG -40.61 DEG BC 96.2 KM
B LAT -17.62 DEG CD 112.4 KM
B LONG -38.18 DEG DA 88.4 KM
C LAT -20.75 DEG TILT DISTANCE 9.4
C LONG -28.26 DEG
D LAT -20.37 DEG
D LONG -42.20 DEG

HIGH RESOLUTION
CORNER COORDINATE SIDE LENGTH
A LAT -18.69 DEG AB 47.6 KM
A LONG -40.61 DEG BC 12.2 KM
B LAT -18.89 DEG CD 47.9 KM
B LONG -39.34 DEG DA 11.7 KM
C LAT -19.29 DEG TILT DISTANCE 73.0
C LONG -39.36 DEG
D LAT -19.17 DEG
D LONG -41.03 DEG

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MISSION /

FRAME NO.

5178 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670817 ALT 127.45 KM TILT ANG 6.15 DEG SUN AZIM 84.19 DEG LATITUDE -17.50 DEG
 HR, MI, SEC 134130.81 ALT RT -0.1354 KM/SEC TILT AZIM 121.15 DEG INCID ANG 76.77 DEG LONGITUDE -40.98 DEG
 LAT -17.36 DEG SWING ANG 26.82 DEG EMISS ANG 6.60 DEG
 LONG -40.49 DEG N.DEV. 85.95 DEG PHASE ANG 82.08 DEG
 ALPHA -5.34 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION			
A LAT -16.07 DEG	AB 104.4 KM	A LAT	-17.35 DEG	CORNER COORDINATE	SIDE LENGTH
A LONG -41.69 DEG	BC 93.4 KM	B LAT	-40.85 DEG	AB 46.3 KM	
B LAT -16.21 DEG	CD 106.1 KM	B LONG	-17.46 DEG	BC 11.8 KM	
B LONG -36.11 DEG	DA 85.8 KM	C LAT	-39.25 DEG	CD 46.6 KM	
C LAT -19.29 DEG	TILT DISTANCE	C LONG	-17.85 DEG	DA 11.4 KM	
C LONG -38.23 DEG	B.4	D LAT	-39.27 DEG	TILT DISTANCE	
D LAT -18.89 DEG		D LONG	-17.73 DEG	65.5	
D LONG -41.59 DEG			-40.88 DEG		

TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR, MO, DY 670817 ALT 124.41 KM TILT ANG 5.70 DEG SUN AZIM 84.48 DEG LATITUDE -16.21 DEG
 HR, MI, SEC 134153.91 ALT RT -0.1270 KM/SEC TILT AZIM 109.39 DEG INCID ANG 76.52 DEG LONGITUDE -39.97 DEG
 LAT -16.07 DEG SWING ANG 15.02 DEG EMISS ANG 6.11 DEG
 LONG -40.37 DEG N.DEV. 85.85 DEG PHASE ANG 82.08 DEG
 ALPHA -5.57 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH	HIGH RESOLUTION			
A LAT -14.71 DEG	AB 102.7 KM	A LAT	-15.97 DEG	CORNER COORDINATE	SIDE LENGTH
A LONG -41.54 DEG	BC 90.9 KM	B LAT	-40.71 DEG	AB 45.3 KM	
B LAT -14.84 DEG	CD 104.7 KM	B LONG	-16.07 DEG	BC 11.5 KM	
B LONG -26.04 DEG	DA 83.6 KM	C LAT	-39.16 DEG	CD 45.4 KM	
C LAT -17.84 DEG	TILT DISTANCE	C LONG	-16.45 DEG	DA 11.1 KM	
C LONG -38.19 DEG	7.7	D LAT	-39.19 DEG	TILT DISTANCE	
D LAT -17.46 DEG		D LONG	-16.33 DEG	60.7	
D LONG -41.80 DEG			-40.74 DEG		

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MISSION /

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
670E17 134216.71	ALT RT -0.1185 KM/SEC LAT -14.80 DEG LONG -45.26 DEG	TILT ANG 5.52 DEG SWING ANG 2.02 DEG N.DEV. _n 85.74 DEG	SUN AZIM 84.77 DEG INCSS ANG. 5° 91 OEG PHASE ANG 82.08 DEG	LATITUDE -14.84 DEG LONGITUDE -39.86 DEG

MEDIUM RESOLUTION					
CORNER	COORDINATE	SIDE LENGTH	ANGLE	DEG	ANGLE
A LAT	-13°36'	AB	101.2	KM	
A LONG	-41.00	BC	88.7	KM	
B LAT	-13°49'	CD	101.4	KM	
B LONG	-37°57'	DA	81.6	KM	TILT DISTANCE
C LAT	-16°42'				
C LONG	-28.17				
D LAT	-16°05'				
D LONG	-41.63				

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	-14°.61 DEG	AB
A LONG	-40°.58 DEG	BC
B LAT	-14°.71 DEG	CD
B LONG	-39.08 DEG	DA
C LAT	-15°.08 DEG	TILT
C LONG	-39.10 DEG	
D LAT	-14°.96 DEG	
D LONG	-40°.61 DEG	

MISS TONY

NO.	TIME	S/C POSITION	S/C-ORIENTATION	PHOTO ILLUMINATION		PRINCIPAL POINT
				SUN AZIM	SUN ALT	
R*HO.DY	670817	ALT	11.81.29 KM	23°43'	DEG	41°05' DEG
R*MI.SEC	175642.31	ALT RT	0.2773 KM/SEC	TILT ANG	23°43'	
		LAT	41.61 DEG	TILT AZIM	27°06'	
		LONG	134.27 DEG	SWING ANG	89°88'	
			N.DEV.	N.DEV.	5.58 DEG	PHASE ANG 120.58 DEG
				EMISS ANG	41°94' DEG	
				INCID ANG	78.65 DEG	
				SUN ANG	251.61 DEG	

MEDIUM RESOLUTION		SIDE LENGTH
CORNER	COORDINATE	
A LAT	58.19 DEG	AB 957.2 K
A LONG	133.15 DEG	BC 344.7 K
B LAT	26.05 DEG	CD 516.9 K
B LONG	127.54 DEG	DA 760.0 K
C LAT	10.64 DEG	TILT DISTANCE
C LONG	94.57 DEG	34.5
D LAT	59.54 DEG	
D LONG	132.52 DEG	

HIGH RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	50.12 DEG	AB 487.5 KM
A LONG	111.11 DEG	BC 178.7 KM
B LAT	34.05 DEG	CD 531.6 KM
B LONG	113.25 DEG	DA 178.4 KM
C LAT	32.58 DEG	TILT DISTANCE
C LONG	106.42 DEG	63.8
D LAT	49.88 DEG	

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PHOTO ILLUMINATION	PRINCIPAL POINT
SUN AZIM	LATITUDE
84.77 DEG	-14.84 DEG
INCID ANG	LONGITUDE
76.29 DEG	-39.86 DEG
EMISS ANG.	
5.91 DEG	
PHASE ANG	
82.08 DEG	

HIGH RESOLUTION		SIDE LENGTH	
CORNER	COORDINATE		
A LAT	-14°.61 DEG	AB	44.3 KM
A LONG	-40°.58 DEG	BC	11.3 KM
B LAT	-14°.71 DEG	CD	44.3 KM
B LONG	-39°.08 DEG	DA	10.9 KM
C LAT	-15°.08 DEG	TILT DISTANCE	
C LONG	-39°.10 DEG		58.8
D LAT	-14°.96 DEG		
D LONG	-40°.61 DEG		

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

5182 YR. MO. DY 670817 ALT 167°46' KM TILT ANG 5°54' DEG SUN AZIM 99°31' DEG LATITUDE 34°96' DEG

HR. MI. SEC 232547.41 ALT RT 0.2121 KM/SEC TILT AZIM 302°51' DEG INCID ANG 74°56' DEG LONGITUDE -41°50' DEG

LAT 34°67' DEG SWING ANG 207°00' DEG EMISS ANG 6°07' DEG

N.DEV. LONG -40°95' DEG PHASE ANG 68°98' DEG

ALPHA 5°56' DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

5183 YR. MO. DY 670817 ALT 169°14' KM TILT ANG 5°74' DEG SUN AZIM 99°47' DEG

HR. MI. SEC 232555.31 ALT RT 0.2146 KM/SEC TILT AZIM 306°41' DEG INCID ANG 74°59' DEG

LAT 35°09' DEG SWING ANG 210°79' DEG EMISS ANG 6°30' DEG

LONG -40°90' DEG N.DEV. PHASE ANG 68°87' DEG

ALPHA 5°59' DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

5183 YR. MO. DY 670817 ALT 144°6' KM TILT ANG 5°54' DEG SUN AZIM 99°47' DEG

HR. MI. SEC 232555.31 ALT RT 0.2146 KM/SEC TILT AZIM 306°41' DEG INCID ANG 74°59' DEG

LAT 35°09' DEG SWING ANG 210°79' DEG EMISS ANG 6°30' DEG

LONG -40°90' DEG N.DEV. PHASE ANG 68°87' DEG

ALPHA 5°59' DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

5183 YR. MO. DY 670817 ALT 144°5' KM TILT ANG 5°74' DEG SUN AZIM 99°47' DEG

HR. MI. SEC 232555.31 ALT RT 0.2146 KM/SEC TILT AZIM 306°41' DEG INCID ANG 74°59' DEG

LAT 35°09' DEG SWING ANG 210°79' DEG EMISS ANG 6°30' DEG

LONG -40°90' DEG N.DEV. PHASE ANG 68°87' DEG

ALPHA 5°59' DEG

MISSION/

FRAME NO.

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

5183 YR. MO. DY 670817 ALT 138°7' KM TILT ANG 5°54' DEG SUN AZIM 99°47' DEG

HR. MI. SEC 232555.31 ALT RT 0.2146 KM/SEC TILT AZIM 306°41' DEG INCID ANG 74°59' DEG

LAT 35°09' DEG SWING ANG 210°79' DEG EMISS ANG 6°30' DEG

LONG -40°90' DEG N.DEV. PHASE ANG 68°87' DEG

ALPHA 5°59' DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 37°23' DEG AB 142°6' KM

A LONG -44°36' DEG BC 113°2' KM

B LAT 36°62' DEG CD 137°6' KM

B LONG -38°52' DEG DA 122°9' KM

C LAT 32°52' DEG TILT DISTANCE 7.9

C LONG -39°14' DEG 7.9

D LAT 33°18' DEG 7.9

D LONG -44°55' DEG 7.9

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 35°31' DEG AB 61°1' KM

A LONG -42°73' DEG BC 15°0' KM

B LAT 35°11' DEG CD 60°8' KM

B LONG -40°27' DEG DA 15°5' KM

C LAT 34°62' DEG TILT DISTANCE 59.0

C LONG -40°34' DEG 59.0

D LAT 34°80' DEG 59.0

D LONG -42°77' DEG 59.0

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT 35°78' DEG AB 61°7' KM

A LONG -42°70' DEG BC 15°2' KM

B LAT 35°57' DEG CD 61°4' KM

B LONG -40°20' DEG DA 15°7' KM

C LAT 35°08' DEG TILT DISTANCE 61.1

C LONG -40°27' DEG 61.1

D LAT 35°26' DEG 61.1

D LONG -42°74' DEG 61.1

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ISSN /

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
67CE17 2335:3.21	ALT RT LAT LONG	170°-86° 0°-217°0 35°-51° -40°-84° KN KM/SEC DEG DEG	TILT ANG TILT AZIM SWING ANG NDEV. 5.9° 309°-94° 214°-31° 84°-98° DEG DEG DEG DEG	SUN AZIM INCL ANG EMISS ANG PHASE ANG 59°-52° 74°-63° 6°-55° 68°-98° DEG DEG DEG DEG
				LATITUDE LONGITUDE
				35°-89° DEG -41°-47° DEG

MEDIUM RESOLUTION.		SIDE LENGTH
CORNER	COORDINATE	
A LAT	26.23 DEG	AB 146.5 KM
A LONG	-44.38 DEG	BC 115.8 KM
B LAT	37.59 DEG	CD 139.8 KM
B LONG	-38.30 DEG	DA 125.7 KM
C LAT	33.81 DEG	TILT DISTANCE
C LONG	-38.97 DEG	8.5
D LAT	34.08 DEG	
D LONG	-44.52 DEG	

HIGH RESOLUTION	
CORNER	COORDINATE
A LAT	36°25' DEG
A LONG	-42°67' DEG
B LAT	36°04' DEG
B LONG	-43°13' DEG
C LAT	35°54' DEG
C LONG	-43°20' DEG
D LAT	35°57' DEG
D LONG	-42°71' DEG

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
5.96 DEG	99.62 DEG	35.89 DEG
TILT AZIM	INCID ANG	LONGITUDE
309.94 DEG	74.63 DEG	-41.47 DEG
SWING ANG	MISS ANG	
214.31 DEG	6.55 DEG	
N.DEV.	PHASE ANG	
64.98 DEG	6B.98 DEG	
	ALPHA	5.22 DEG

MISSION

S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
TILT ANG	SUN AZIM	LATITUDE
6.21	99.78 DEG	36°.36 DEG
TILT AZIM	INCID ANG	LONGITUDE
313.19	74°.67 DEG	-41°.35 DEG
SWING ANG	EMISS ANG	
217.55	6°.83 DEG	
N.DEV.	PHASE ANG	
84.89	68°.98 DEG	
	ALPHA	5.65 DEG

MEDIUM RESOLUTION			HIGH RESOLUTION		
CORNER	COORDINATE	SIDE LENGTH	CORNER	COORDINATE	SIDE LENGTH
A LAT	38°.73 DEG	AB 148.6 KM	A LAT	36°.72 DEG	AB 63.1 KM
A LONG	-44°.35 DEG	BC 117.1 KM	A LONG	-42°.64 DEG	BC 15.5 KM
B LAT	38°.08 DEG	CD 140.9 KM	B LAT	36°.51 DEG	CD 62.7 KM
B LONG	-38.18 DEG	DA 127.2 KM	B LONG	-40.06 DEG	DA 16.0 KM
C LAT	34°.26 DEG	TILT DISTANCE B.8	C LAT	35.00 DEG	TILT DISTANCE 66.2
C LONG	-32.88 DEG		C LONG	-40.13 DEG	
D LAT	34°.53 DEG	TILT DISTANCE B.9	D LAT	36.19 DEG	TILT DISTANCE 66.2
D LONG.	-44°.51 DEG		D LONG.	-42.68 DEG	

HIGH RESOLUTION		STICK
CORNER	COORDINATE	
A LAT	36.72	DEG
A LONG	-42.64	DEG
B LAT	36.51	DEG
B LONG	-40.06	DEG
C LAT	36.00	DEG
C LONG	-40.13	DEG
D LAT	36.19	DEG
D LONG	-42.68	DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY-MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

5186 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR, MO, DY ALT 136°75 KM TILT ANG 1.14 DEG SUN AZIM 96°38 DEG LATITUDE 25°76 DEG
 HR, MI, SEC ALT RT 0.1569 KM/SEC TILT AZIM 349°95 DEG INCID ANG 73°25 DFG LONGITUDE -43°74 DEG
 LAT 25.67 DEG SWING ANG 254°55 DEG EMISS ANG 1°23 DEG
 LONG -43°72 DEG N.DEV. 84°61 DEG PHASE ANG 73°51 DEG
 ALPHA 0°34 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 27°52 DEG AB 113.5 KM
 A LONG -45°69 DEG BC 95.0 KM
 B LAT 27°15 DEG CD 111.8 KM
 B LONG -41°50 DEG DA 95.7 KM
 C LAT 24°04 DEG TILT DISTANCE 1.6
 C LONG -41°90 DEG 1.6
 D LAT 24°37 DEG 1.6
 D LONG -45°53 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 26.04 DEG AB 4.9 KM
 A LONG -44°52 DEG BC 12.4 KM
 B LAT 25.88 DEG CD 4.9 KM
 B LONG -42.82 DEG DA 12.4 KM
 C LAT 25.48 DEG TILT DISTANCE 12.0
 C LONG -42.86 DEG 12.0
 D LAT 25.53 DEG
 D LONG -44.66 DEG

MISSION/

FRAME NO.

5187 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION
 YR, MO, DY ALT 137°76 KM TILT ANG 1.48 DEG SUN AZIM 96°50 DEG LATITUDE 26°13 DEG
 HR, MI, SEC 0238 4.12 ALT RT 0.1591 KM/SEC TILT AZIM 353°61 DEG INCID ANG 73°86 DEG LONGITUDE -43°70 DEG
 LAT 26°02 DEG SWING ANG 258°20 DEG EMISS ANG 1°59 DEG
 LONG -43.68 DFG N.DEV. 84°60 DEG PHASE ANG 73°51 DEG
 ALPHA 0°34 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 27°91 DEG AB 114.6 KM
 A LONG -45°68 DEG BC 95.7 KM
 B LAT 27°54 DEG CD 112.4 KM
 B LONG -41°43 DEG DA 96.4 KM
 C LAT 24°40 DEG TILT DISTANCE 2.1
 C LONG -41°85 DEG
 D LAT 24°73 DEG
 D LONG -45°51 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 26.41 DEG AB 4.9 KM
 A LONG -44.59 DEG BC 12.5 KM
 B LAT 26.26 DEG CD 4.9 KM
 B LONG -42.77 DEG DA 12.5 KM
 C LAT 25.85 DEG TILT DISTANCE 15.6
 C LONG -42.82 DEG
 D LAT 26.00 DEG
 D LONG -44.63 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

5188
YR. MO. DY
HR. MI. SEC.

TIME
67CE1B
023010.44

S/C POSITION
ALT RT
0.1613 KM/SEC

SWING ANG
26.37 DEG

N.DEV.
-43.65 DEG

TILT ANG
1.82 DEG

TILT AZIM
355.91 DEG

PHOTO ILLUMINATION
SUN AZIM 96.63 DEG

INCID ANG 73.87 DEG

EMISS ANG 1.96 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT.

28.30 DEG

AB 115.8 KM

B LONG

-45.67 DEG

BC 96.5 KM

C LAT

27.53 DEG

CD 113.0 KM

D LONG

-41.35 DEG

DA 97.2 KM

E LAT

24.77 DEG

TIKT DISTANCE

2.5

F LONG

-41.79 DEG

G LAT

25.10 DEG

H LONG

-45.89 DEG

I LAT

25.14 DEG

J LONG

-41.74 DEG

K LAT

25.48 DEG

L LONG

-45.87 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH

A LAT.

26.79 DEG

AB 50.1 KM

B LONG

-44.56 DEG

BC 12.6 KM

C LAT

26.64 DEG

CD 49.9 KM

D LONG

-42.72 DEG

DA 12.6 KM

E LAT

26.22 DEG

TIKT DISTANCE

19.3

F LONG

-42.77 DEG

G LAT

26.38 DEG

H LONG

-44.60 DEG

I LAT

26.51 DEG

J ALPHA

0.35 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

PRINCIPAL POINT
LATITUDE 26.89 DEG

LONGITUDE -43.62 DEG

PHOTO ILLUMINATION
SUN AZIM 96.76 DEG

INCID ANG 73.87 DEG

EMISS ANG 2.34 DEG

PHASE ANG 73.51 DEG

ALPHA 0.35 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

MISSION
FRAME

FULL LIST ORDERED BY MISSION AND FRAME NUMBER 04/19/71 PAGE 498

TIME	S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
670618 0233±23.22	ALT RT LAT LONG	140.86 0.1657 27.07 -43.57	KH KN/SEC DEG DEG	SUN AZIM TILT ANG TILT AZIM SWING ANG N.DEV.
				96.89 DEG -2.52 DEG 358.64 DEG 263.18 DEG 84.54 DEG

MEDIUM	RESOLUTION	SIDE	LENGTH
CORNER	COORDINATE		
A LAT	29.11 DEG	AB	118.2 KM
A LONG	-45.64 DEG	BC	98.1 KM
B LAT	28.72 DEG	CD	114.3 KM
B LONG	-41.20 DEG	DA	98.8 KM
C LAT	25.51 DEG	TILT	
C LONG	-41.68 DEG	DISTANCE	
D LAT	25.85 DEG		
D LONG	-45.65 DEG		

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	27° 56' DEG	AB
A LONG	-44° 50' DEG	BC
B LAT	27° 40' DEG	CD
B LONG	-42° 61' DEG	DA
C LAT	26° 98' DEG	TIL
C LONG	-42° 67' DEG	
D LAT	27° 14' DEG	
D LONG	-44° 54' DEG	

MISSION /
FRAME NO.

E	S/C POSITION	S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		ALT	KM	TILT ANG	2.87 DEG	SUN AZIM	97.02 DEG
818	ALT RT	141.94	KM	TILT AZIM	359.52 DEG	INCID ANG	73.89 DEG
529.66	ALT RT	0.1680	KM/SEC	SWING ANG	264.05 DEG	EMISS ANG	3.11 DEG
	LAT	27.42	DEG	N.DEV.	84.53 DEG	PHASE ANG	73.51 DEG
	LONG	-43.53	DEG			A.PHA	

MEDIUM RESOLUTION		SIDE LENGTH	DEG
CORNER	COORDINATE		
A LAT	29°51' DEG	AB	119.4 KM
A LONG	-45°62' DEG	BC	99.0 KM
B LAT	29°12' DEG	CD	114.9 KM
B LONG	-41°13' DEG	DA	99.6 KM
C LAT	25°58' DEG	TILT DISTANCE	
C LONG	-41°52' DEG		4.0
D LAT	26°23' DEG		
D LONG	24°58' DEG		

HIGH RESOLUTION		SIG
CORNER	COORDINATE	
A	LAT	27.95
A	LONG	-44.47
B	LAT	27.78
B	LONG	-42.56
C	LAT	27.36
C	LONG	-42.61
D	LAT	27.52
D	LONG	-44.55

LUNAR CRIBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/

FRAME NO.

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 143.03 KM
ALT RT 0.1702 KM/SEC
LAT 27.78 DEG
LONG -43.49 DEG
N.DEV.S/C ORIENTATION
TILT ANG 3.23 DEG
TILT AZIM 0.22 DEG
SWING ANG 264.72 DEG
PHASE ANG 73.51 DEG
ALPHA 0.36 DEGPHOTO ILLUMINATION
SUN AZIM 97.15 DEG
INCID ANG 73.90 DEG
EMISS ANG 3.49 DEG
PHASE ANG 73.51 DEG
ALPHA 0.36 DEGPRINCIPAL POINT
LATITUDE 28.04 DEG
LONGITUDE -43.49 DEG

04/19/71

PAGE

MISSION/

FRAME NO.

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 120.7 KM
ALT RT 0.1725 KM/SEC
LAT 215.6 KM
LONG 100.5 KM
C LAT 26.26 DEG
C LONG -41.56 DEG
D LAT 26.60 DEG
D LONG -45.80 DEGS/C ORIENTATION
TILT ANG 3.59 DEG
TILT AZIM 0.78 DEG
SWING ANG 265.27 DEG
PHASE ANG 73.51 DEG
N.DEV.PHOTO ILLUMINATION
SUN AZIM 97.15 DEG
INCID ANG 73.90 DEG
EMISS ANG 3.49 DEG
PHASE ANG 73.51 DEG
ALPHA 0.36 DEGPRINCIPAL POINT
LATITUDE 28.04 DEG
LONGITUDE -43.49 DEG

04/19/71

PAGE

MISSION/

FRAME NO.

TIME
YR, MO, DY
HR, MI, SECS/C POSITION
ALT 122.0 KM
ALT RT 0.1725 KM/SEC
LAT 116.3 KM
LONG -43.46 DEGS/C ORIENTATION
TILT ANG 3.59 DEG
TILT AZIM 0.78 DEG
SWING ANG 265.27 DEG
PHASE ANG 73.51 DEG
N.DEV.PHOTO ILLUMINATION
SUN AZIM 97.15 DEG
INCID ANG 73.90 DEG
EMISS ANG 3.49 DEG
PHASE ANG 73.51 DEG
ALPHA 0.36 DEGPRINCIPAL POINT
LATITUDE 28.04 DEG
LONGITUDE -43.49 DEG

04/19/71

PAGE

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION /

FRAME NO.

5194

YR, MO, DY

HR, MIN, SEC

670618

085844.31

ALT RT

0.1334

KM/SEC

21.95

DEG

LAT

-47.60

DEG

LONG

84.52

DEG

N.DEV.

84.52

DEG

PHASE ANG

74.95

DEG

ALPHA

-0.96

MISSION /

FRAME NO.

5195

YR, MO, DY

HR, MIN, SEC

670618

085850.10

ALT RT

0.1355

KM/SEC

22.27

DEG

LAT

-47.57

DEG

LONG

84.50

DEG

N.DEV.

84.50

DEG

PHASE ANG

74.95

DEG

ALPHA

-0.96

MISSION /

FRAME NO.

5194

YR, MO, DY

HR, MIN, SEC

670618

085844.31

ALT RT

0.1334

KM/SEC

21.95

DEG

LAT

-47.60

DEG

LONG

84.52

DEG

N.DEV.

84.52

DEG

PHASE ANG

74.95

DEG

ALPHA

-0.96

MISSION /

FRAME NO.

5195

YR, MO, DY

HR, MIN, SEC

670618

085850.10

ALT RT

0.1355

KM/SEC

22.27

DEG

LAT

-47.57

DEG

LONG

84.50

DEG

N.DEV.

84.50

DEG

PHASE ANG

74.95

DEG

ALPHA

-0.96

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

127.39 KM

TILT ANG 1.32 DEG

SUN AZIM 95.06 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.41 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

105.6 KM

TILT ANG 1.57 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

89.3 KM

TILT ANG 39.62 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

106.5 KM

TILT ANG 1.57 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

89.3 KM

TILT ANG 39.62 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

104.5 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

88.8 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

88.8 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

88.8 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

88.8 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

88.8 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

88.8 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

88.8 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

88.8 KM

TILT ANG 39.41 DEG

SUN AZIM 95.18 DEG

INCID ANG 73.99 DEG

EMISS ANG 1.69 DEG

PHASE ANG 74.95 DEG

ALPHA -0.96 DEG

TIME

S/C POSITION

S/C ORIENTATION

PHOTO ILLUMINATION

PRINCIPAL POINT

CORNER COORDINATE

SIDE LENGTH

A LAT

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/

FRAME NO.

5196

TIME

670218

YR. MO. DY

085655.93

HR. MI. SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	128.96 KM	TIILT ANG	1.85 DEG	SUN AZIM	95.29 DEG	LATITUDE	22.71 DEG
ALT RT	0.1376 KM/SEC	TIILT AZIM	33.95 DEG	INCID ANG	73.99 DEG	LONGITUDE	-47.45 DEG
LAT	22.60 DEG	SWING ANG	298.47 DEG	EMISS. ANG	1.99 DEG		
LONG	-47.54 DEG	N.DEV.	84.48 DEG	PHASE ANG	74.95 DEG		
				ALPHA	-0.97 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	24.36 DEG	AB	107.4 KM	SUN AZIM	95.41 DEG	LATITUDE	23.06 DEG
A LONG	-45.23 DEG	BC	90.4 KM	INCID ANG	73.99 DEG	LONGITUDE	-47.42 DEG
B LAT	24.04 DEG	CD	105.1 KM	EMISS. ANG	2.30 DEG		
B LONG	-45.36 DEG	DA	89.4 KM	PHASE ANG	74.95 DEG		
C LAT	21.68 DEG	TIILT DISTANCE		ALPHA	-0.97 DEG		
C LONG	-45.75 DEG	2.5					
D LAT	21.42 DEG						
D LONG	-49.45 DEG						

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	22.97 DEG	AB	46.6 KM	SUN AZIM	95.29 DEG	LATITUDE	22.71 DEG
A LONG	-48.26 DEG	BC	11.7 KM	INCID ANG	73.99 DEG	LONGITUDE	-47.45 DEG
B LAT	22.83 DEG	CD	46.4 KM	EMISS. ANG	2.30 DEG		
B LONG	-46.60 DEG	DA	11.6 KM	PHASE ANG	74.95 DEG		
C LAT	22.44 DEG	TIILT DISTANCE		ALPHA	-0.97 DEG		
C LONG	-46.64 DEG	19.6					
D LAT	22.59 DEG						
D LONG	-48.30 DEG						

MISSION/

FRAME NO.

5197

TIME

670218

YR. MO. DY

0855 1.79

HR. MI. SEC

S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
ALT	129.78 KM	TIILT ANG	2.14 DEG	SUN AZIM	95.41 DEG	LATITUDE	23.06 DEG
ALT RT	0.1398 KM/SEC	TIILT AZIM	29.78 DEG	INCID ANG	73.99 DEG	LONGITUDE	-47.42 DEG
LAT	22.92 DEG	SWING ANG	294.29 DEG	EMISS. ANG	2.30 DEG		
LONG	-47.50 DEG	N.DEV.	84.46 DEG	PHASE ANG	74.95 DEG		
				ALPHA	-0.97 DEG		

MEDIUM RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	106.3 DEG	AB	106.3 KM	SUN AZIM	95.41 DEG	LATITUDE	23.06 DEG
A LONG	-45.21 DEG	BC	91.1 KM	INCID ANG	73.99 DEG	LONGITUDE	-47.42 DEG
B LAT	24.40 DEG	CD	105.5 KM	EMISS. ANG	2.30 DEG		
B LONG	-45.30 DEG	DA	90.0 KM	PHASE ANG	74.95 DEG		
C LAT	21.42 DEG	TIILT DISTANCE		ALPHA	-0.97 DEG		
C LONG	-45.70 DEG	2.9					
D LAT	21.76 DEG						
D LONG	-49.43 DEG						

HIGH RESOLUTION

CORNER COORDINATE		SIDE LENGTH		PHOTO ILLUMINATION		PRINCIPAL POINT	
A LAT	23.33 DEG	AB	46.9 KM	SUN AZIM	95.29 DEG	LATITUDE	22.71 DEG
A LONG	-48.23 DEG	BC	11.8 KM	INCID ANG	73.99 DEG	LONGITUDE	-47.45 DEG
B LAT	23.18 DEG	CD	46.7 KM	EMISS. ANG	2.30 DEG		
B LONG	-46.56 DEG	DA	11.7 KM	PHASE ANG	74.95 DEG		
C LAT	22.79 DEG	TIILT DISTANCE		ALPHA	-0.97 DEG		
C LONG	-46.60 DEG	22.7					
D LAT	22.94 DEG						
D LONG	-48.27 DEG						

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MISSION/
FRAME NO.5198
YR.MO.DY
HR.MI.SEC

TIME

S/C POSITION
ALT RT 130.61 KM
ALT RT 0.1419 KM/SEC
LAT 23.25 DEG
LONG -47.47 DEG
N.DEV.S/C ORIENTATION
TILT ANG 2.45 DEG
TILT AZIM 26.62 DEG
SWING ANG 291.12 DEG
N.DEV. 84.43 DEG
PHASE ANG 74.95 DEG
ALPHA -0.98 DEG

MISSION RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 25.10 DEG	AB 109.3 KM
A LONG -49.20 DEG	BC 91.7 KM
B LAT 24.77 DEG	CD 106.0 KM
B LONG -45.23 DEG	DA 90.6 KM
C LAT. 21.76 DEG	TILT DISTANCE
C LONG -45.65 DEG	3.3
D LAT 22.11 DEG	
D LONG -49.41 DEG	

PHOTO ILLUMINATION

SUN AZIM 95.52 DEG

INCID ANG 73.99 DEG

EMISS ANG 2.63 DEG

PHASE ANG 74.95 DEG

ALPHA -0.98 DEG

PRINCIPAL POINT
LATITUDE 23.41 DEG
LONGITUDE -47.38 DEG

MISSION RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 25.47 DEG	AB 110.3 KM
A LONG -49.18 DEG	BC 92.4 KM
B LAT 25.13 DEG	CD 106.5 KM
B LONG -45.17 DEG	DA 91.3 KM
C LAT 22.11 DEG	TILT DISTANCE
C LONG -45.60 DEG	3.8
D LAT 22.46 DEG	
D LONG -45.38 DEG	

PHOTO ILLUMINATION
SUN AZIM 95.64 DEG
INCID ANG 73.99 DEG
EMISS ANG 2.97 DEG
PHASE ANG 74.95 DEG
ALPHA -0.98 DEGPRINCIPAL POINT
LATITUDE 23.77 DEG
LONGITUDE -47.34 DEG

MISSION RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 24.04 DEG	AB 47.5 KM
A LONG -48.17 DEG	BC 12.0 KM
B LAT .23.89 DEG	CD 47.3 KM
B LONG -.46.46 DEG	DA 11.9 KM
C LAT 23.49 DEG	TILT DISTANCE
C LONG -46.51 DEG	29.3
D LAT 23.65 DEG	
D LONG -48.21 DEG	

PHOTO ILLUMINATION
SUN AZIM 95.64 DEG
INCID ANG 73.99 DEG
EMISS ANG 2.97 DEG
PHASE ANG 74.95 DEG
ALPHA -0.98 DEGPRINCIPAL POINT
LATITUDE 23.77 DEG
LONGITUDE -47.34 DEG

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MISSION/ FRAME NO.		TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
5200	YR, MO, DY HR, MI, SEC	670618 065519.57	ALT RT	132.32 KM 0.1462 KM/SEC	ALT AZIM SWING ANG	3.07 DEG 22.19 DEG	TILT ANG N.DEV.	SUN AZIM ENISS ANG	95.76 DEG 3.31 DEG	LATITUDE PHASE ANG	24.12 DEG 73.99 DEG
MEDIUM RESOLUTION											
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
A LAT 25.84	DEG	A LAT 111.3 KM	AB	A LAT 24.40	DEG	A LAT 47.9 KM	AB	A LAT 24.40	DEG	A LAT 47.9 KM	AB
A LONG -49.16	DEG	B LAT 93.1 KM	BC	A LONG -48.14	DEG	B LAT 12.0 KM	BC	A LONG -48.14	DEG	B LAT 12.0 KM	BC
B LAT 25.50	DEG	C LAT 107.0 KM	CD	B LAT 24.24	DEG	C LAT 47.6 KM	CD	B LAT 24.24	DEG	C LAT 47.6 KM	CD
B LONG -45.10	DEG	D LAT 92.0 KM	DA	B LONG -46.42	DEG	D LAT 12.0 KM	DA	B LONG -46.42	DEG	D LAT 12.0 KM	DA
C LAT 22.46	DEG	TILT DISTANCE		C LAT 23.85	DEG	TILT DISTANCE		C LAT 23.85	DEG	TILT DISTANCE	
C LONG -45.55	DEG	4.2		C LONG -46.47	DEG	32.6		C LONG -46.47	DEG	32.6	
D LAT 22.81	DEG	TILT DISTANCE		D LAT 24.00	DEG	TILT DISTANCE		D LAT 24.00	DEG	TILT DISTANCE	
D LONG -49.36	DEG	4.2		D LONG -48.18	DEG	36.1		D LONG -48.18	DEG	36.1	
HIGH RESOLUTION											
MISSION/ FRAME NO.		TIME		S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
5201	YR, MO, DY HR, MI, SEC	670618 065525.57	ALT RT	132.20 KM 0.1483 KM/SEC	ALT AZIM SWING ANG	3.39 DEG 285.03 DEG	TILT ANG N.DEV.	SUN AZIM ENISS ANG	95.88 DEG 3.66 DEG	LATITUDE PHASE ANG	24.48 DEG 73.99 DEG
MEDIUM RESOLUTION											
CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH		CORNER COORDINATE		SIDE LENGTH	
A LAT 26.22	DEG	A LAT 112.4 KM	AB	A LAT 24.76	DEG	A LAT 48.2 KM	AB	A LAT 24.76	DEG	A LAT 48.2 KM	AB
A LONG -45.15	DEG	B LAT 93.8 KM	BC	A LONG -48.11	DEG	B LAT 12.1 KM	BC	A LONG -48.11	DEG	B LAT 12.1 KM	BC
B LAT 25.88	DEG	C LAT 107.5 KM	CD	B LAT 24.60	DEG	C LAT 47.9 KM	CD	B LAT 24.60	DEG	C LAT 47.9 KM	CD
B LONG -45.04	DEG	D LAT 92.7 KM	DA	B LONG -46.37	DEG	D LAT 12.1 KM	DA	B LONG -46.37	DEG	D LAT 12.1 KM	DA
C LAT 22.81	DEG	TILT DISTANCE		C LAT 24.21	DEG	TILT DISTANCE		C LAT 24.21	DEG	TILT DISTANCE	
C LONG -45.50	DEG	4.7		C LONG -46.42	DEG	36.1		C LONG -46.42	DEG	36.1	
D LAT 23.16	DEG	TILT DISTANCE		D LAT 24.36	DEG	TILT DISTANCE		D LAT 24.36	DEG	TILT DISTANCE	
D LONG -49.34	DEG	4.7		D LONG -48.15	DEG	36.1		D LONG -48.15	DEG	36.1	

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MISSION/
FRAME NO.

5202 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT RT 134.44 KM SUN AZIM 95.68 DEG LATITUDE 24.83 DEG
 HR. MI. SEC 121C29.31 ALT RT 0.151 KM/SEC TILT AZIM 294.42 DEG LONGITUDE -49.54 DEG
 LAT 24.64 DEG SWING ANG 199.08 DEG
 LONG -49.08 DEG N.DEV. 84.99 DEG EMISS ANG 6.47 DEG
 PHASE ANG 68.50 DEG
 ALPHA 6.11 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 26.65 DEG AB 114.0 KM
 A LONG -51.59 DEG BC 90.2 KM
 B LAT 26.17 DEG CD 110.9 KM
 B LONG -47.43 DEG DA 98.9 KM
 C LAT 23.21 DEG TILT DISTANCE 8.6
 C LONG -47.81 DEG 8.6
 D LAT 23.40 DEG
 D LONG -51.79 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 25.11 DEG AB 49.1 KM
 A LONG -50.43 DEG BC 12.0 KM
 B LAT 24.95 DEG CD 48.9 KM
 B LONG -48.65 DEG DA 12.5 KM
 C LAT 24.56 DEG TILT DISTANCE 64.0
 C LONG -48.70 DEG
 D LAT 24.70 DEG
 D LONG -50.47 DEG

MISSION/
FRAME NO.

5203 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT RT 135.44 KM SUN AZIM 95.81 DEG LATITUDE 25.22 DEG
 HR. MI. SEC 121G35.91 ALT RT 0.1535 KM/SEC TILT AZIM 297.67 DEG LONGITUDE -49.51 DEG
 LAT 25.00 DEG SWING ANG 202.33 DEG
 LONG -49.04 DEG N.DEV. 85.02 DEG EMISS ANG 6.61 DEG
 PHASE ANG 68.50 DEG
 ALPHA 6.11 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 27.07 DEG AB 115.2 KM
 A LONG -51.59 DEG BC 91.0 KM
 B LAT 26.57 DEG CD 111.5 KM
 B LONG -47.36 DEG DA 99.7 KM
 C LAT 23.59 DEG TILT DISTANCE 8.7
 C LONG -47.75 DEG
 D LAT 23.78 DEG
 D LONG -51.77 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 25.50 DEG AB 49.5 KM
 A LONG -50.41 DEG BC 12.1 KM
 B LAT 25.35 DEG CD 49.3 KM
 B LONG -48.61 DEG DA 12.6 KM
 C LAT 24.95 DEG TILT DISTANCE 65.3
 C LONG -48.65 DEG
 D LAT 25.09 DEG
 D LONG -50.44 DEG



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MISSION/

FRAME NO.

5204
YR. MO. DY
HR. MI. SEC.

TIME

670618

ALT RT

0.1558 KM/SEC

LAT

25°36' DEG

LONG

-49.00 DEG

N.DEV.

85.04 DEG

PHASE ANG

68.50 DEG

ALPHA

6.11 DEG

S/C POSITION
 ALT 136.45 KM
 ALT RT 0.1558 KM/SEC
 LAT 25.36 DEG
 LONG -49.00 DEG

S/C ORIENTATION
 TILT ANG 6.28 DEG
 TILT AZIM 300.72 DEG
 SWING ANG 205.39 DEG
 N.DEV. 85.04 DEG

PHOTO ILLUMINATION
 SUN AZIM 95.93 DEG
 INCID ANG 74.63 DEG
 EMISS ANG 6.77 DEG
 PHASE ANG 68.50 DEG

PRINCIPAL POINT
 LATITUDE 25.51 DEG
 LONGITUDE -49.47 DEG

MISSION/

FRAME NO.

5205
YR. MO. DY
HR. MI. SEC.

TIME

670618

ALT RT

0.1580 KM/SEC

LAT

25.71 DEG

LONG

-48.96 DEG

N.DEV.

85.07 DEG

PHASE ANG

68.50 DEG

ALPHA

6.12 DEG

S/C POSITION
 ALT 137.45 KM
 ALT RT 0.1580 KM/SEC
 LAT 25.71 DEG
 LONG -48.96 DEG

S/C ORIENTATION
 TILT ANG 6.43 DEG
 TILT AZIM 303.59 DEG
 SWING ANG 208.25 DEG
 N.DEV. 85.07 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.05 DEG
 INCID ANG 74.64 DEG
 EMISS ANG 6.95 DEG
 PHASE ANG 68.50 DEG

PRINCIPAL POINT
 LATITUDE 25.99 DEG
 LONGITUDE -49.44 DEG

MISSION/

FRAME NO.

5206
YR. MO. DY
HR. MI. SEC.

TIME

121048.81

ALT RT

0.1580 KM/SEC

LAT

101.4 KM

LONG

-48.96 DEG

N.DEV.

85.07 DEG

PHASE ANG

68.50 DEG

ALPHA

6.12 DEG

S/C POSITION
 ALT 117.6 KM
 ALT RT 0.1580 KM/SEC
 LAT 101.4 KM
 LONG -48.96 DEG

S/C ORIENTATION
 TILT ANG 6.43 DEG
 TILT AZIM 303.59 DEG
 SWING ANG 208.25 DEG
 N.DEV. 85.07 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.05 DEG
 INCID ANG 74.64 DEG
 EMISS ANG 6.95 DEG
 PHASE ANG 68.50 DEG

PRINCIPAL POINT
 LATITUDE 25.99 DEG
 LONGITUDE -49.44 DEG

MISSION/

FRAME NO.

5207
YR. MO. DY
HR. MI. SEC.

TIME

670618

ALT RT

0.1580 KM/SEC

LAT

101.4 KM

LONG

-48.96 DEG

N.DEV.

85.07 DEG

PHASE ANG

68.50 DEG

ALPHA

6.12 DEG

S/C POSITION
 ALT 117.6 KM
 ALT RT 0.1580 KM/SEC
 LAT 101.4 KM
 LONG -48.96 DEG

S/C ORIENTATION
 TILT ANG 6.43 DEG
 TILT AZIM 303.59 DEG
 SWING ANG 208.25 DEG
 N.DEV. 85.07 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.05 DEG
 INCID ANG 74.64 DEG
 EMISS ANG 6.95 DEG
 PHASE ANG 68.50 DEG

PRINCIPAL POINT
 LATITUDE 25.99 DEG
 LONGITUDE -49.44 DEG

MISSION/

FRAME NO.

5208
YR. MO. DY
HR. MI. SEC.

TIME

121048.81

ALT RT

0.1580 KM/SEC

LAT

101.4 KM

LONG

-48.96 DEG

N.DEV.

85.07 DEG

PHASE ANG

68.50 DEG

ALPHA

6.12 DEG

S/C POSITION
 ALT 117.6 KM
 ALT RT 0.1580 KM/SEC
 LAT 101.4 KM
 LONG -48.96 DEG

S/C ORIENTATION
 TILT ANG 6.43 DEG
 TILT AZIM 303.59 DEG
 SWING ANG 208.25 DEG
 N.DEV. 85.07 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.05 DEG
 INCID ANG 74.64 DEG
 EMISS ANG 6.95 DEG
 PHASE ANG 68.50 DEG

PRINCIPAL POINT
 LATITUDE 25.99 DEG
 LONGITUDE -49.44 DEG

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MISSION /

FRAME NO.

TIME

S/C POSITION
 ALT 141.89 KM
 ALT RT 0.1578 KM/SEC
 LAT 27.20 DEG
 LONG -52.29 DEG

S/C ORIENTATION
 TILT ANG 5.63 DEG
 TILT AZIM 295.63 DEG
 SWING ANG 200.46 DEG
 N.DEV. 85.19 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.38 DEG
 INCID ANG 74.89 DEG
 EMISS ANG 6.37 DEG
 PHASE ANG 68.48 DEG
 ALPHA 6.00 DEG

MISSION /

FRAME NO.

TIME

S/C POSITION
 ALT 142.87 KM
 ALT RT 0.1698 KM/SEC
 LAT 27.51 DEG
 LONG -52.25 DEG

S/C ORIENTATION
 TILT ANG 5.00 DEG
 TILT AZIM 298.51 DEG
 SWING ANG 203.34 DEG
 N.DEV. 85.21 DEG

MISSION /

FRAME NO.

TIME

S/C POSITION
 ALT 121.5 KM
 ALT RT 0.1698 KM/SEC
 LAT 27.51 DEG
 LONG -52.25 DEG

S/C ORIENTATION
 TILT ANG 5.00 DEG
 TILT AZIM 298.51 DEG
 SWING ANG 203.34 DEG
 N.DEV. 85.21 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.49 DEG
 INCID ANG 74.90 DEG
 EMISS ANG 6.50 DEG
 PHASE ANG 68.88 DEG
 ALPHA 6.00 DEG

MISSION /

FRAME NO.

TIME

S/C POSITION
 ALT 121.5 KM
 ALT RT 0.1698 KM/SEC
 LAT 27.51 DEG
 LONG -52.25 DEG

S/C ORIENTATION
 TILT ANG 5.00 DEG
 TILT AZIM 298.51 DEG
 SWING ANG 203.34 DEG
 N.DEV. 85.21 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.49 DEG
 INCID ANG 74.90 DEG
 EMISS ANG 6.50 DEG
 PHASE ANG 68.88 DEG
 ALPHA 6.00 DEG

PHOTO ILLUMINATION
 SUN AZIM 96.49 DEG
 INCID ANG 74.90 DEG
 EMISS ANG 6.50 DEG
 PHASE ANG 68.88 DEG
 ALPHA 6.00 DEG

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MISSION/
FRAME NO.

5210 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT RT 110.53 KM TILT ANG 9.57 DEG SUN AZIM 91.84 DEG LATITUDE 12.67 DEG
 HR. MI. SEC 213542.19 ALT RT 0.0718 KM/SEC TILT AZIM 275.59 DEG INCID ANG 75.49 DEG LONGITUDE -56.11 DEG
 LAT 12.61 DEG SWING ANG 180.72 DEG EMISS ANG 13.19 DEG
 LONG -55.49 DEG N.DEV. 85.36 DEG PHASE ANG 65.32 DEG
 ALPHA 10.17 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 14.20 DEG AB 94.7 KM
 A LONG -57.74 DEG BC 72.6 KM
 B LAT 13.75 DEG CD 9.8 KM
 B LONG -54.55 DEG DA 84.5 KM
 C LAT 11.36 DEG TILT DISTANCE 13.5
 C LONG -54.77 DEG 13.5
 D LAT 11.42 DEG
 D LONG -57.95 DEG

S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 ALT RT 110.89 KM TILT ANG 9.58 DEG SUN AZIM 91.92 DEG LATITUDE 12.97 DEG
 LAT 0.0738 KM/SEC TILT AZIM 277.30 DEG INCID ANG 75.47 DEG LONGITUDE -56.09 DEG
 LONG -55.46 DEG SWING ANG 162.45 DEG EMISS ANG 10.29 DEG
 N.DEV. 85.40 DEG PHASE ANG 65.32 DEG
 ALPHA 10.15 DEG

MEDIUM RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 14.51 DEG AB 95.2 KM
 A LONG -57.72 DEG BC 72.8 KM
 B LAT 14.06 DEG CD 94.6 KM
 B LONG -54.52 DEG DA 84.8 KM
 C LAT 11.67 DEG TILT DISTANCE 13.6
 C LONG -54.74 DEG 13.6
 D LAT 11.72 DEG
 D LONG -57.92 DEG

S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 ALT RT 110.89 KM TILT ANG 9.58 DEG SUN AZIM 91.92 DEG LATITUDE 12.97 DEG
 LAT 0.0738 KM/SEC TILT AZIM 277.30 DEG INCID ANG 75.47 DEG LONGITUDE -56.09 DEG
 LONG -55.46 DEG SWING ANG 162.45 DEG EMISS ANG 10.29 DEG
 N.DEV. 85.40 DEG PHASE ANG 65.32 DEG
 ALPHA 10.15 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 12.90 DEG AB 41.1 KM
 A LONG -56.82 DEG BC 9.8 KM
 B LAT 12.77 DEG CD 41.1 KM
 B LONG -55.43 DEG DA 10.5 KM
 C LAT 12.45 DEG TILT DISTANCE 02.6
 C LONG -55.46 DEG
 D LAT 12.55 DEG
 D LONG -56.84 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
 A LAT 13.20 DEG AB 41.3 KM
 A LONG -56.79 DEG BC 9.9 KM
 B LAT 13.08 DEG CD 41.2 KM
 B LONG -55.46 DEG DA 10.5 KM
 C LAT 12.75 DEG TILT DISTANCE 02.7
 C LONG -55.43 DEG
 D LAT 12.86 DEG
 D LONG -56.82 DEG

MISSION/
FRAME NO.

5211 TIME S/C POSITION S/C ORIENTATION PHOTO ILLUMINATION PRINCIPAL POINT
 YR. MO. DY ALT RT 110.89 KM TILT ANG 9.58 DEG SUN AZIM 91.92 DEG LATITUDE 12.97 DEG
 HR. MI. SEC 213547.24 ALT RT 0.0738 KM/SEC TILT AZIM 277.30 DEG INCID ANG 75.47 DEG LONGITUDE -56.09 DEG
 LAT 12.89 DEG SWING ANG 162.45 DEG EMISS ANG 10.29 DEG
 LONG -55.46 DEG N.DEV. 85.40 DEG PHASE ANG 65.32 DEG
 ALPHA 10.15 DEG

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.5212
YR. MO. DY
HR. MI. SECTIME
670618
213552.32'S/C POSITION
ALT RT 111.27 KM
LAT 13.78 KM/SEC
LONG -55.43 DEG
S/C ORIENTATION
TILT ANG 9.59 DEG
TILT AZIM 279.02 DEG
SWING ANG 184.19 DEG
N.DEV. 65.45 DEG
PHOTO ILLUMINATION
SUN AZIM 92.01 DEG
INCID ANG 75.46 DEG
EMISS ANG 10.22 DEG
PHASE ANG 65.32 DEG
ALPHA 10.13 DEGMISSION/
FRAME NO.5213
YR. MO. DY
HR. MI. SECTIME
670618
213557.44'S/C POSITION
ALT RT 111.67 KM
LAT 13.47 DEG
LONG -55.41 DEG
S/C ORIENTATION
TILT ANG 9.62 DEG
TILT AZIM 280.74 DEG
SWING ANG 185.93 DEG
N.DEV. 85.50 DEG
PHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 75.44 DEG
EMISS ANG 10.24 DEG
PHASE ANG 65.32 DEG
ALPHA 10.12 DEGMISSION/
FRAME NO.5214
YR. MO. DY
HR. MI. SECTIME
670618
213557.44'S/C POSITION
ALT RT 0.0777 KM/SEC
LAT 13.47 DEG
LONG -55.41 DEG
S/C ORIENTATION
TILT ANG 9.62 DEG
TILT AZIM 280.74 DEG
SWING ANG 185.93 DEG
N.DEV. 85.50 DEG
PHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 75.44 DEG
EMISS ANG 10.24 DEG
PHASE ANG 65.32 DEG
ALPHA 10.12 DEGMISSION/
FRAME NO.5215
YR. MO. DY
HR. MI. SECTIME
670618
213557.44'S/C POSITION
ALT RT 0.0777 KM/SEC
LAT 13.47 DEG
LONG -55.41 DEG
S/C ORIENTATION
TILT ANG 9.62 DEG
TILT AZIM 280.74 DEG
SWING ANG 185.93 DEG
N.DEV. 85.50 DEG
PHOTO ILLUMINATION
SUN AZIM 92.09 DEG
INCID ANG 75.44 DEG
EMISS ANG 10.24 DEG
PHASE ANG 65.32 DEG
ALPHA 10.12 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 14.83 DEG AB 95.7 KM
A LONG -57.71 DEG BC 73.1 KM
B LAT 14.37 DEG CD 94.8 KM
B LONG -54.48 DEG DA 85.1 KM
C LAT 11.97 DEG TILT DISTANCE 13.7
C LONG -54.71 DEG
D LAT 12.03 DEG
D LONG -57.90 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 13.51 DEG AB 41.4 KM
A LONG -56.77 DEG BC 9.9 KM
B LAT 13.39 DEG CD 41.4 KM
B LONG -55.37 DEG DA 10.6 KM
C LAT 13.06 DEG TILT DISTANCE 02.8
C LONG -55.40 DEG
D LAT 13.16 DEG
D LONG -55.80 DEG

HIGH RESOLUTION

CORNER COORDINATE SIDE LENGTH
A LAT 13.82 DEG AB 41.6 KM
A LONG -56.75 DEG BC 9.9 KM
B LAT 13.70 DEG CD 41.5 KM
B LONG -55.34 DEG DA 10.6 KM
C LAT 13.37 DEG TILT DISTANCE 03.1
C LONG -55.37 DEG
D LAT 13.47 DEG
D LONG -56.78 DEG

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FULL LIST ORDERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

5214 YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 112.07 KM LAT 13.76 DEG LONG -55.38 DEG	ALT ANG 9.65 DEG TILT AZIM 282.46 DEG SWING ANG 187.57 DEG N.DEV. 85.55 DEG	SUN AZIM 92.18 DEG INCID ANG 75.43 DEG EMISS ANG 10.28 DEG PHASE ANG 65.32 DEG ALPHA . 10.10 DEG	LATITUDE 13.90 DEG LONGITUDE -56.01 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 15.47 DEG A LONG -57.69 DEG B LAT 15.00 DEG B LONG -54.41 DEG C LAT 12.58 DEG C LONG -52.64 DEG D LAT 12.64 DEG D LONG -57.66 DEG	AB 96.3 KM BC 73.6 KM CD 95.1 KM DA 85.7 KM TIILT DISTANCE 13.7

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 14.13 DEG A LONG -56.73 DEG B LAT 14.01 DEG B LONG -55.32 DEG C LAT 13.68 DEG C LONG -55.35 DEG D LAT 13.78 DEG D LONG -56.76 DEG	AB 41.7 KM BC 10.0 KM CD 41.6 KM DA 10.6 KM TIILT DISTANCE 03.5

MISSION/
FRAME NO.

5215 YR, MO, DY
HR, MI, SEC

S/C POSITION	S/C ORIENTATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT 112.49 KM LAT 14.06 DEG LONG -55.35 DEG	ALT ANG 9.69 DEG TILT AZIM 284.18 DEG SWING ANG 189.41 DEG N.DEV. 85.60 DEG	SUN AZIM 92.27 DEG INCID ANG 75.42 DEG EMISS ANG 10.33 DEG PHASE ANG 65.32 DEG ALPHA 10.08 DEG	LATITUDE 14.21 DEG LONGITUDE -55.99 DEG

MEDIUM RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 14.79 DEG A LONG -57.57 DEG B LAT 15.32 DEG B LONG -54.37 DEG C LAT 12.89 DEG C LONG -54.61 DEG D LAT 12.95 DEG D LONG -57.84 DEG	AB 97.4 KM BC 73.9 KM CD 95.2 KM DA 86.1 KM TIILT DISTANCE 13.8

HIGH RESOLUTION

CORNER COORDINATE	SIDE LENGTH
A LAT 14.45 DEG A LONG -56.71 DEG B LAT 14.32 DEG B LONG -55.29 DEG C LAT 13.99 DEG C LONG -59.32 DEG D LAT 14.09 DEG D LONG -56.73 DEG	AB 41.9 KM BC 10.0 KM CD 41.8 KM DA 10.7 KM TIILT DISTANCE 03.9

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

FULL LIST ORDERED BY MISSION AND FRAME NUMBER

MISSION

LINE NO.	TIME	S/C POSITION		S/C ORIENTATION		PHOTO ILLUMINATION		PRINCIPAL POINT	
		YR.MD.DY	HR:MIN:SEC	ALT	KM	TILT ANG	DEG	SUN AZIM	DEG
1	670818	AL1	RT	112.92	9.74	285.89	DEG	92.36	14.53
2	214012.96			0.0837	DEG	191.3	DEG	75.40	55.96
3		LAT		14.35	DEG	N.DEV.	DEG	10.38	
4		LONG		-55.33	DEG	85.65	DEG	65.32	
5								ALPHA	10.07

MEDIUM RESOLUTION		SIDE LEFT	SIDE RIGHT
CORNER	COORDINATE		
A LAT	16.12 DEG	AB	98.4
A LONG	-57.66 DEG	BC	74.2
B LAT	15.64 DEG	CD	86.6
B LONG	-51.33 DEG	DA	TILT DI
C LAT	13.20 DEG		13.
C LONG	-54.58 DEG		
D LAT	13.27. DEG		
D LONG	-57.81		

HIGH RESOLUTION		SIDE
CORNER	COORDINATE	
A LAT	14°.76 DEG	AB
A LONG	-56°.69 DEG	BC
B LAT	14°.63 DEG	CD
B LONG	-55°.26 DEG	DA
C LAT	14°.30 DEG	TILT
C LONG	-55°.29 DEG	
D LAT	14°.41 DEG	
D LONG	-56°.71 DEG	

MISSION /
FRAME NO.
E-217

S/C POSITION	S/C ELEVATION	PHOTO ILLUMINATION	PRINCIPAL POINT
ALT RT	113°36' KN 0.0857 KM/SEC	TILT ANG 9°80' DEG TILT AZIM 287°59' DEG SWING ANG 192°85' DEG N.DEV.	SUN AZIM 92°45' DEG INCID ANG 75°39' DEG EMISS. ANG 10°45' DEG PHASE ANG 65°32' DEG ALPHA 10°05' DEG
LAT	14°65' DEG		LATITUDE 14°84' DEG
LONG	-55°30' DEG		LONGITUDE -55°94' DEG

MEDIUM RESOLUTION		SIDE LENGTH
CORNER COORDINATE		
A LAT	16.44	DEG AB 98.6 KH
A LONG	-57.65	DEG BC 74.6 KH
B LAT	15.57	DEG CD 95.6 KH
B LONG	-54.30	DEG DA 86.9 KH
C LAT	13.52	DEG TILT DISTANCE
C LONG	-54.55	DEG 13.9
D LAT	13.58	DEG
D LONG	-57.70	DEG

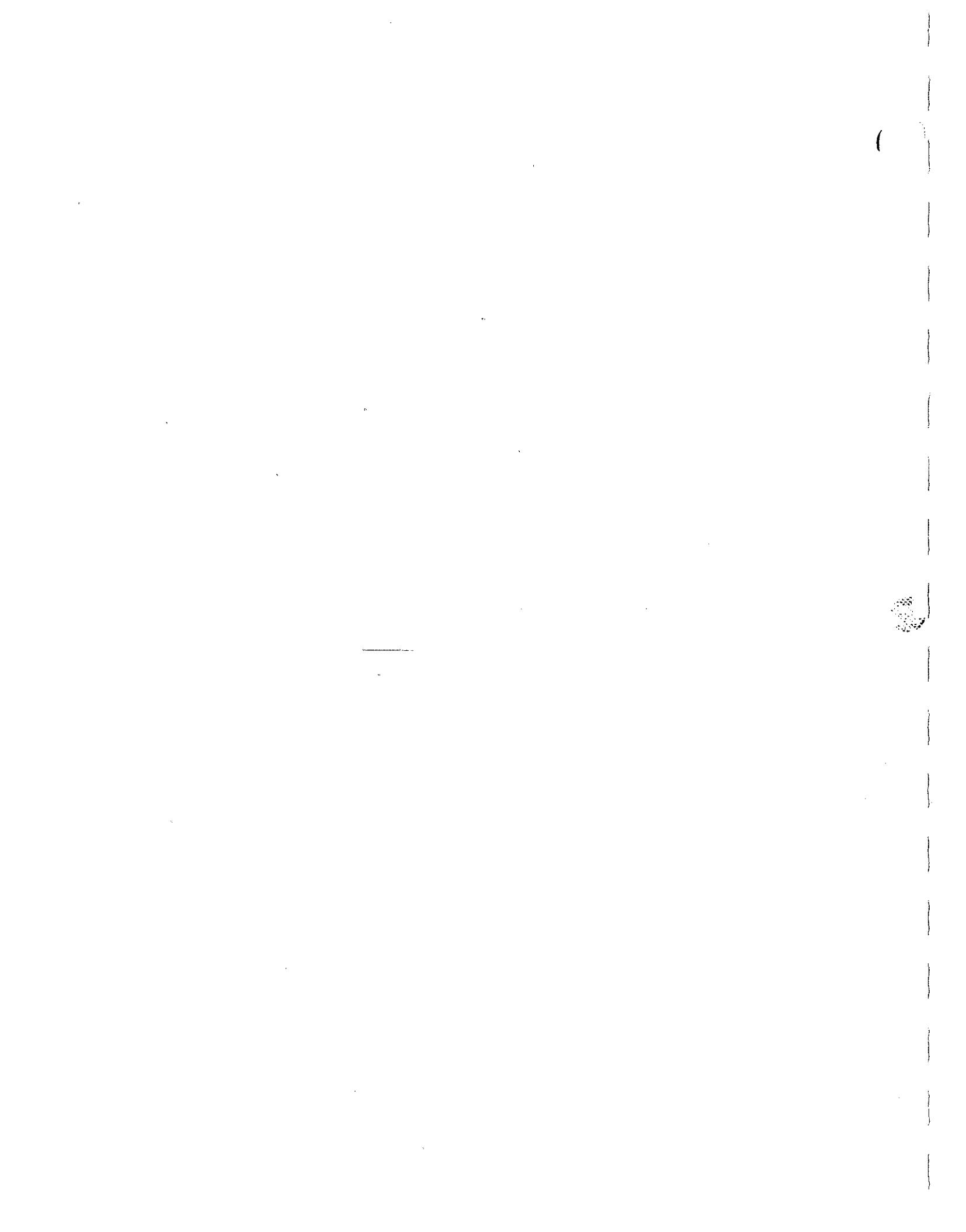
CORNER	HIGH RESOLUTION COORDINATE	SIDE
A LAT	15.08 DEG	AB
A LONG	-56.67 DEG	BC
B LAT	14.95 DEG	CD
B LONG	-55.23 DEG	DA
C LAT	14.62 DEG	TILT
C LONG	-55.26 DEG	
D LAT	14.72 DEG	
D LONG	-55.26 DEG	

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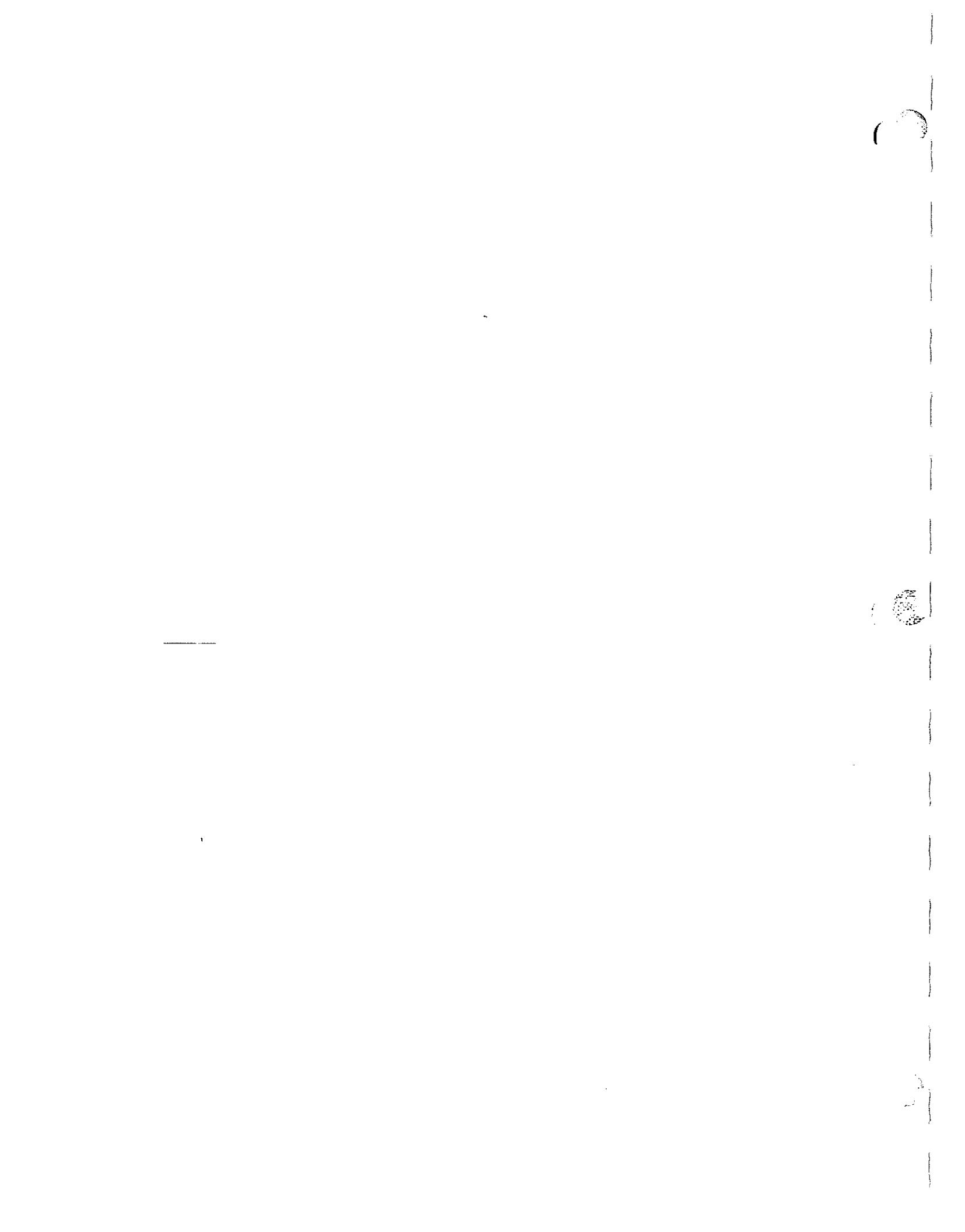
PHOTO ILLUMINATION	PRINCIPAL POINT
SUN AZIM	LATITUDE
INCID ANG	LONGITUDE
EMISS ANG	14° 53' DEG
PHASE ANG	-55° 96' DEG
AP PHA	10° 07' DEG

HIGH RESOLUTION			
CORNER	COORDINATE	SIDE LENGTH	
A LAT	14°076 DEG	AB	42.1 KH
A LONG	-56°169 DEG	BC	10.1 KH
B LAT	14°063 DEG	CD	41.9 KH
B LONG	-55°226 DEG	DA	10.7 KH
C LAT	14°30 DEG	TILT DISTANCE	
C LONG	-55°29 DEG	04.5	
D LAT	14°41 DEG		
D LONG	-55°71 DEG		



APPENDIX B

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
POSITION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER



LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

POSITION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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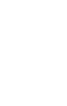
MISSION/	FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
		A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG
1005	4-17	87.05	-1.46	85.74	-0.55	80.35	5.54	62.07	2.08
1006	4-04	87.63	-1.56	86.31	-0.65	81.35	5.58	62.67	2.95
1007	3-92	88-20	-1-70	85.89	-0.76	81-96	5-23	83-27	2-82
1008	3-79	88-78	-1-82	87-45	-0-16	82-66	5-97	83-86	2-69
1009	3-67	89-25	-1-94	88-03	-0-97	83-16	4-92	84-46	2-57
1010	3-55	89-52	-2-07	88-61	-1-07	83-76	4-77	86-05	2-44
1011	3-42	90-17	-2-19	89-17	-1-18	84-35	4-63	85-63	2-31
1012	3-30	91-C6	-2-32	89-74	-1-29	84-95	4-48	86-22	2-19
1013	3-18	91-E4	-2-44	90-32	-1-40	85-54	4-33	86-80	2-06
1014	3-06	92-22	-2-57	90-89	-1-51	86-13	4-19	87-39	1-94
1015	2-94	92-79	-2-70	91-47	-1-62	86-72	4-04	87-74	1-94
1016	2-82	93-37	-2-83	92-04	-1-73	87-31	3-90	88-55	1-69
1017	2-70	93-54	-2-96	92-40	-1-84	87-88	3-76	89-12	1-56
1018	2-59	94-52	-3-09	93-18	-1-95	88-47	3-62	89-70	1-44
1019	2-47	95-13	-3-22	93-76	-2-06	89-05	3-48	90-28	1-31
1020	2-35	95-68	-3-35	94-30	-2-18	89-63	3-14	90-85	1-19
1021	1-37	100-60	-4-55	99-41	-3-30	94-57	2-18	95-86	0-13
1022	1-26	101-42	-4-70	100-42	-3-32	95-26	2-05	96-45	0-00
1023	1-15	102-04	-4-85	100-63	-3-4	95-86	1-92	97-05	-0-12
1024	1-04	102-66	-5-00	101-25	-3-57	96-45	1-79	97-64	-0-24
1025	4-02	74-76	-2-40	78-22	-2-22	73-02	4-31	74-82	2-55
1026	4-49	74-26	-1-78	74-44	-1-76	68-77	4-72	69-31	2-96
1027	4-74	72-35	-1-47	72-41	-1-49	66-49	4-94	70-24	3-79
1028	-2-50	177-15	11-84	-169-64	8-27	-135-48	-32-21	-135-68	-17-99
1029	4-48	64-01	-1-86	64-11	-1-90	58-33	4-73	58-89	2-93
1030	-29-72	173-10	-12-03	178-73	-8-81	-31-96	-24	-18-01	-16-60
1031	5-55	50-66	-0-91	50-72	-1-38	44-47	5-99	45-08	3-97
1032	5-11	52-59	-1-28	52-67	-1-60	46-60	5-69	47-21	3-56
1033	2-58	59-29	-1-27	59-49	-1-57	52-78	3-79	54-46	2-08
1034	3-26	60-65	-3-02	60-97	-2-78	55-38	3-44	55-98	1-77
1035	-27-32	175-11	14-88	-179-12	11-43	-142-33	-30-85	-144-39	-16-56
1036	-27-24	175-77	14-94	-178-80	11-76	-141-55	-30-59	-143-63	-16-51
1037	-2-559	-178-72	15-64	-174-18	15-17	-133-99	-31-59	-136-70	-16-95
1038	-2-552	-178-11	15-73	-173-68	15-64	-133-60	-31-57	-135-85	-16-00
1039	-2-538	-168-37	17-58	-165-36	22-17	-110-43	-33-92	-118-42	-15-05
1040	-2-534	-168-32	17-58	-165-36	22-17	-110-43	-33-92	-117-47	-15-01
1041	6-50	42-00	-0-26	42-10	-1-18	35-12	7-10	35-83	4-85
1042	7-75	24-82	0-90	34-93	-0-29	27-72	8-52	27-92	5-99
1043	2-03	46-88	0-18	46-91	-0-22	45-21	4-08	46-41	1-57
1044	4-24	22-16	1-97	22-19	1-76	25-92	4-42	30-21	3-71
1045	4-15	32-57	1-90	32-60	1-71	30-36	4-32	30-65	3-62
1046	2-93	34-70	1-01	34-72	0-97	32-94	3-03	33-11	2-47
1047	2-75	33-49	0-86	35-51	0-B3	33-78	2-84	33-95	2-29
1048	2-05	43-C6	-1-65	43-11	-1-45	41-55	0-19	41-75	-0-25
1049	1-015	43-48	-1-48	43-53	-1-54	41-97	0-10	42-17	-0-34
1050	0-06	41-67	-1-61	41-32	-1-33	40-00	0-24	40-34	-0-37
1051	-0-06	41-82	-1-65	41-67	-1-37	40-15	0-21	40-49	-0-40
1052	-0-09	41-82	-1-65	41-68	-1-37	40-15	0-21	40-49	-0-40
1053	-0-12	41-57	-1-62	41-77	-1-43	40-64	0-18	40-79	-0-43
1054	-0-15	42-12	-1-71	41-77	-1-43	40-45	0-15	41-29	-1-12
1055	-0-18	42-27	-1-75	41-92	-1-46	40-79	0-11	41-29	-1-12
1056	-0-21	42-42	-1-78	42-07	-1-44	40-75	0-08	41-74	-1-19
1057	-0-24	42-57	-1-81	42-22	-1-53	40-90	0-05	41-24	-1-18
1058	-0-27	42-72	-1-85	42-37	-1-56	40-93	0-02	41-28	-1-24
1059	-0-27	42-72	-1-85	42-37	-1-56	40-93	0-02	41-28	-1-24

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

POSITION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				HIGH RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION				
	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG	E LAT	E LONG	F LAT	F LONG	
106C -0.3C	42.88	-1.88	42.53	-1.59	41.52	-0.02	41.54	-0.05	41.69	-0.62	41.86	-0.58	
136A -0.3A	43.03	-1.92	42.68	-1.62	41.35	-0.05	41.54	-0.65	42.34	-1.35	42.18	-0.61	
1062 -0.37	43.16	-1.95	42.83	-1.65	41.50	-0.08	41.84	-0.68	42.49	-1.38	42.34	-0.65	
1063 -0.40	43.24	-1.98	42.98	-1.69	41.65	-0.11	41.99	-0.72	42.54	-1.41	42.49	-0.71	
1064 -0.43	43.49	-2.02	43.14	-1.72	41.80	-0.14	42.14	-0.75	42.79	-1.45	42.64	-0.71	
1065 -0.46	43.56	-2.05	43.25	-1.75	41.96	-0.18	42.29	-0.78	42.94	-1.48	42.62	-0.74	
1066 -0.49	43.69	-2.09	43.44	-1.78	42.11	-0.21	42.45	-0.81	43.10	-1.51	42.94	-0.77	
1067 -0.52	43.82	-2.12	43.60	-1.82	42.26	-0.24	42.60	-0.84	43.25	-1.55	43.10	-0.81	
1068 C-87	43.96	-2.16	43.92	-0.36	33.61	-1.18	33.96	-0.58	34.60	-0.11	34.45	-0.07	
1069 C-84	43.92	-0.69	35.07	-0.41	33.76	-1.15	34.11	-0.54	34.75	-0.14	34.43	-0.10	
1070 C-81	35.56	-0.72	35.22	-0.44	33.91	-1.11	34.26	-0.51	34.90	-0.17	34.57	-0.13	
1071 C-78	35.21	-0.75	35.37	-0.47	34.06	-1.08	34.41	-0.48	35.05	-0.20	36.69	-0.16	
1072 C-75	26.86	-0.78	35.52	-0.50	34.21	-1.05	34.56	-0.45	35.19	-0.23	35.04	-0.19	
1073 C-71	36.62	-0.82	35.66	-0.53	34.36	-1.01	34.71	-0.42	35.34	-0.22	35.19	-0.19	
1074 C-68	36.16	-0.85	35.81	-0.56	34.51	-0.98	36.66	-0.38	35.49	-0.29	35.17	-0.42	
1075 C-65	36.35	-0.88	35.96	-0.59	34.66	-0.95	35.01	-0.35	35.64	-0.33	35.37	-0.39	
1076 C-62	36.45	-0.91	36.11	-0.62	34.81	-0.91	35.15	-0.32	35.78	-0.36	35.61	-0.32	
1077 C-59	36.60	-0.94	36.26	-0.65	34.96	-0.88	35.30	-0.29	35.93	-0.39	35.78	-0.35	
1078 C-56	26.75	-0.97	36.40	-0.65	35.11	-0.85	35.45	-0.26	36.08	-0.42	35.93	-0.38	
1079 C-52	36.50	-1.01	36.55	-0.75	35.53	-0.81	36.50	-0.22	36.23	-0.45	35.92	-0.29	
1080 C-49	37.45	-1.04	36.70	-0.75	35.41	-0.78	35.75	-0.19	36.37	-0.48	35.91	-0.23	
1081 C-46	37.39	-1.07	36.85	-0.78	35.56	-0.75	35.90	-0.16	36.52	-0.52	35.26	-0.20	
1082 C-43	37.34	-1.10	37.00	-0.81	35.71	-0.71	36.05	-0.13	36.67	-0.56	35.37	-0.29	
1083 C-40	37.45	-1.14	37.15	-0.84	35.86	-0.68	36.20	-0.10	36.82	-0.58	35.55	-0.32	
1084 C-39	15.82	-1.86	15.85	-1.65	13.41	-1.15	13.70	-0.49	14.77	-2.49	14.73	-2.48	
1085 C-35	1.15	-2.05	1.35	-0.35	25.54	-0.07	25.26	-0.81	25.60	-0.22	25.23	-0.19	
1086 C-32	25.02	-0.38	25.69	-0.10	24.43	-1.39	24.75	-0.62	25.37	-0.16	25.05	-0.13	
1087 C-29	26.17	-0.41	25.84	-0.13	24.58	-1.36	25.91	-0.78	25.52	-0.13	25.21	-0.16	
1088 C-26	26.32	-0.44	25.99	-0.16	24.74	-1.32	25.06	-0.75	25.67	-0.19	25.36	-0.19	
1089 C-23	26.47	-0.48	26.14	-0.20	24.89	-1.29	25.21	-0.72	25.82	-0.09	25.50	-0.13	
1090 C-20	26.42	-0.51	26.29	-0.23	25.04	-1.25	25.36	-0.68	25.97	-0.03	25.65	-0.07	
1091 C-18	26.77	-0.54	26.44	-0.26	25.19	-1.22	24.60	-0.65	25.22	-0.19	24.91	-0.17	
1092 C-15	26.92	-0.57	26.59	-0.29	25.35	-1.16	25.57	-0.62	25.27	-0.04	25.98	-0.03	
1093 C-12	27.82	-0.77	27.49	-0.48	26.29	-1.16	25.67	-0.62	25.37	-0.04	25.96	-0.03	
1094 C-9	27.67	-0.61	27.64	-0.32	25.50	-1.15	25.82	-0.58	26.28	-0.07	26.20	-0.07	
1095 C-6	28.12	-0.64	26.89	-0.35	25.65	-1.11	25.97	-0.55	26.57	-0.10	26.27	-0.09	
1096 C-3	27.37	-0.67	27.04	-0.38	25.80	-1.08	26.12	-0.52	26.72	-0.13	26.41	-0.13	
1097 C-0.75	27.57	-0.72	27.19	-0.41	25.96	-1.04	26.27	-0.49	26.87	-0.16	26.42	-0.15	
1098 C-0.52	27.82	-0.73	27.34	-0.45	26.11	-1.01	25.51	-0.65	25.82	-0.13	26.51	-0.13	
1099 C-0.29	27.67	-0.55	27.14	-0.22	25.87	-1.01	26.42	-0.42	27.17	-0.23	26.88	-0.20	
1100 C-0.05	28.12	-0.61	27.64	-0.34	26.41	-0.94	25.72	-0.39	27.32	-0.26	27.03	-0.21	
1101 C-0.45	28.12	-0.83	27.79	-0.54	26.55	-0.90	26.88	-0.35	27.47	-0.29	27.18	-0.22	
1102 -4.6-57	113.47	0-	0-	-0.07	13.99	-0.64	127.43	-0.56	114.41	-0.78	98.80	-0.78	
1103 2-89	6.88	1-10	B-90	1-02	7.19	3-00	7.40	2.47	8.25	1-65	-0.13	26.57	
1104 1-16	12.32	-0.31	12.00	-0.06	10.73	-1.39	11.11	0-83	11.70	-0.20	11.56	-0.16	
1105 0-58	12.88	-0.43	12.57	-0.18	11.37	1.26	11.68	0-70	12.27	0-08	11.40	-0.16	
1106 0-86	13.45	-0.55	13.14	-0.29	11.94	1-12	12.25	0-58	12.82	-0-04	11.97	-0.14	
1107 1-08	0-73	14.01	-0-67	13.70	1-04	12.51	1-00	13.40	-0-16	12.70	-0-01	12.54	-0-01
1108 0-61	14.57	-0-79	14.26	-0-52	13.08	0-87	13.39	0-33	13.95	-0-28	13.10	-0-49	
1109 0-49	15.13	-0-91	14.82	-0-64	13.65	0-74	13.95	0-21	14-51	-0-40	13.66	-0-37	
1110 0-37	15.68	-1-03	15.37	-0-57	14.21	1-42	14-51	0-61	15-07	-0-52	14-93	-0-49	
1111 0-26	16.23	-1-15	15.92	-0-87	14-77	1-45	15-05	-0-03	15-62	-0-64	15-33	-0-60	
1112 3-77	-4-46	1-82	1-62	-6-39	3-92	-6-18	3-30	-5-16	2-38	-5-19	2-37	-5-43	
1113 3-68	-4-06	1-75	1-56	-5-95	3-83	-5-75	3-21	-4-75	2-31	-4-77	2-30	-5-01	



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MISSION/ FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
	A LAT	B LONG	B LAT	C LONG	A LAT	B LONG	C LAT	D LONG
1115	-15.46	126.29	32.87	122.27	-79.83	160.99	-10.79	148.59
1116	-18.40	134.20	35.45	131.32	25.36	-166.40	123.91	172.82
-43.38	105.49	23.09	119.80	14.50	139.25	134.35	139.57	154.66
1117	-1.64	-0.51	-2.12	-0.28	-3.28	1.10	-2.99	0.57
1118	0.86	-1.70	-0.54	-1.92	-0.31	-3.14	1.07	-2.41
1119	0.86	-1.70	-0.54	-1.92	-0.31	-2.99	0.54	-2.41
1120	-2.77	-2.95	-0.57	-1.84	-0.34	-2.99	0.51	-2.41
1121	-2.74	-1.42	-0.60	-1.70	-0.37	-2.85	1.00	-2.12
1122	-2.71	-1.28	-0.62	-1.56	-0.40	-2.71	0.97	-2.07
1123	-2.68	-1.14	-0.63	-1.42	-0.43	-2.57	0.94	-2.00
1124	-2.65	-1.00	-0.68	-1.28	-0.46	-2.43	0.92	-1.94
1125	-2.62	-0.86	-0.71	-1.14	-0.49	-2.43	0.91	-1.87
1126	-2.59	-0.72	-0.57	-0.74	-0.34	-2.14	0.87	-1.73
1127	-2.56	-0.58	-0.77	-0.70	-0.51	-2.05	0.85	-1.59
1128	-2.53	-0.45	-0.80	-0.73	-0.54	-1.86	0.82	-1.45
1129	-2.50	-0.31	-0.83	-0.59	-0.60	-1.72	0.78	-1.31
1130	-2.47	-0.17	-0.86	-0.45	-0.63	-1.58	0.75	-1.17
1131	-2.44	-0.03	-0.85	-0.21	-0.44	-1.44	0.72	-1.03
1132	-2.41	0.10	-0.92	-0.18	-0.69	-1.31	0.65	-0.90
1133	-2.38	0.24	-0.24	-0.04	-0.71	-1.17	0.62	-0.76
1134	-2.35	-14.51	1.12	-14.45	1.04	-15.90	2.70	-15.05
1135	-2.31	-15.12	0.70	-15.10	0.65	-16.51	2.26	-16.30
1136	-22.45	109.32	21.32	111.20	16.63	151.72	-25.98	145.33
1137	1.90	-18.84	0.34	-19.09	-0.76	-22.94	2.67	-20.95
1138	1.35	-16.75	0.36	-16.73	0.04	-17.91	1.40	-17.80
1139	-1.29	-18.75	-1.47	-18.72	-0.44	-19.91	0.89	-19.74
1140	0.67	-19.68	-0.67	-19.66	-0.57	-20.80	0.71	-20.65
1141	-2.86	-3.62	-4.15	-3.79	-3.92	-4.89	-2.63	-4.62
1142	-2.95	-4.27	-3.25	-4.04	-4.36	-4.73	-4.09	-4.57
1143	-3.06	-2.41	-4.40	-2.70	-3.82	-2.83	-3.55	-3.33
1144	-3.15	-1.64	-4.53	-2.14	-4.27	-3.28	-2.93	-3.00
1145	-3.26	-1.27	-4.66	-1.56	-4.40	-2.73	-3.03	-2.45
1146	-3.36	-0.67	-4.79	-0.98	-4.52	-2.17	-3.13	-2.88
1147	-3.46	-0.07	-4.93	-0.38	-4.65	-1.59	-3.24	-2.91
1148	-3.56	0.54	-5.07	0.23	-4.23	-0.78	-1.01	-3.35
1149	-3.77	-23.74	-0.52	-23.73	-0.50	-24.89	0.92	-24.76
1150	1.78	-23.61	0.11	-29.72	0.31	-31.01	1.78	-31.01
1151	0.70	-22.14	-0.61	-23.10	-0.72	-24.03	0.52	-24.29
1152	1.41	-25.42	0.05	-26.49	-0.02	-37.68	1.43	-37.72
1153	1.27	-35.91	0.06	-35.89	-0.14	-37.05	1.28	-37.09
1154	1.13	-35.31	0.23	-35.28	-0.26	-36.43	1.14	-36.46
1155	1.13	-34.69	0.20	-35.28	-0.26	-36.43	1.14	-36.46
1156	0.99	-34.69	-0.33	-34.67	-0.38	-35.89	0.99	-35.83
1157	-2.23	-22.61	0.11	-22.72	0.31	-23.87	-2.28	-22.96
1158	-2.55	-22.37	-2.32	-22.67	-2.63	-23.81	-2.31	-22.82
1159	-2.58	-22.24	-2.30	-22.53	-2.66	-23.68	-2.36	-22.69
1160	-2.60	-22.10	-2.30	-22.39	-2.69	-23.54	-2.35	-22.73
1161	-2.62	-21.56	-2.30	-22.26	-2.72	-23.41	-2.38	-22.41
1162	-2.65	-21.82	-2.02	-22.12	-2.75	-22.61	-2.41	-22.52
1163	-2.68	-21.68	-4.05	-21.98	-3.60	-23.14	-4.04	-22.56
1164	-2.71	-21.54	-4.09	-21.84	-3.81	-23.00	-4.04	-22.43
1165	-2.73	-21.40	-4.12	-21.70	-3.84	-22.87	-4.04	-22.43
1166	-2.76	-21.55	-4.15	-21.56	-3.87	-22.73	-4.05	-22.43
1167	-2.78	-21.12	-4.18	-21.52	-3.90	-22.59	-4.04	-22.41
1168	-2.81	-20.57	-4.21	-21.28	-3.93	-22.45	-4.07	-22.39

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POSITION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	CORNER COORDINATES -				MEDIUM RESOLUTION -				HIGH RESOLUTION -			
	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG	A LAT	A LONG	B LAT	B LONG
1169	-2.84	-20.83	-4.25	-21.13	-3.96	-22.32	-2.60	-22.18	-3.11	-21.44	-3.72	-21.58
1170	-2.86	-20.68	-4.28	-20.99	-3.99	-22.04	-2.62	-22.04	-3.14	-21.30	-3.75	-21.44
1171	-2.89	-20.54	-4.31	-20.71	-4.02	-22.04	-2.65	-21.72	-3.17	-21.16	-3.78	-21.30
1172	-2.82	-20.35	-4.33	-20.70	-4.05	-21.90	-2.68	-21.57	-3.19	-21.02	-3.81	-21.31
1173	-3.79	-21.63	-5.82	-21.46	-5.29	-23.15	-3.77	-22.92	-4.18	-22.28	-4.95	-22.30
1174	2.85	-21.52	0.92	-56.89	-56.69	-58.89	3.01	-58.58	2.40	-57.60	1.49	-57.64
1175	-2.77	-24.67	-4.44	-3.57	-4.13	-35.99	-2.74	-35.79	-3.11	-35.22	-3.78	-35.41
1176	-2.49	-26.32	-3.83	-3.61	-3.58	-37.61	-2.25	-37.44	-2.76	-36.90	-3.35	-35.37
1177	-2.52	-26.12	-3.96	-3.47	-3.61	-37.61	-2.28	-37.31	-2.78	-36.76	-3.37	-37.04
1178	-2.59	-26.03	-3.90	-3.33	-3.64	-37.47	-2.30	-37.17	-2.81	-36.62	-3.40	-37.75
1179	-2.57	-25.89	-3.93	-36.19	-3.67	-37.33	-2.33	-37.03	-2.84	-36.48	-3.43	-36.77
1180	-2.60	-25.76	-3.96	-36.05	-3.70	-37.19	-2.36	-36.89	-2.87	-36.34	-3.46	-36.63
1181	-2.62	-25.61	-3.99	-35.90	-3.73	-37.05	-2.38	-36.75	-2.89	-36.20	-3.49	-36.83
1182	-2.65	-25.46	-4.02	-35.76	-3.75	-36.92	-2.55	-36.55	-3.25	-36.06	-3.55	-36.35
1183	-2.68	-25.22	-4.05	-35.62	-3.78	-36.62	-2.41	-36.61	-2.92	-36.06	-3.52	-36.34
1184	-1.37	-43.72	-2.65	-3.99	-2.42	-45.08	-1.13	-44.80	-1.62	-44.27	-2.19	-44.41
1185	-1.40	-43.59	-2.67	-43.86	-2.45	-44.95	-1.16	-44.67	-1.65	-44.14	-2.22	-44.62
1186	-1.42	-43.46	-2.70	-43.73	-2.48	-44.82	-1.18	-44.35	-1.68	-44.01	-2.25	-44.15
1187	-1.45	-43.33	-2.73	-43.60	-2.50	-44.69	-1.21	-44.42	-1.70	-43.88	-2.27	-44.55
1188	-1.47	-43.19	-2.75	-43.47	-2.53	-44.56	-1.24	-44.29	-1.73	-43.75	-2.30	-44.02
1189	-1.50	-43.06	-2.79	-43.34	-2.55	-44.43	-1.27	-44.16	-1.76	-43.62	-2.37	-44.30
1190	-1.53	-42.93	-2.82	-43.21	-2.58	-44.30	-1.29	-44.03	-1.80	-43.49	-2.35	-43.77
1191	-1.55	-42.80	-2.84	-43.08	-2.61	-44.17	-1.32	-43.90	-1.81	-43.36	-2.38	-43.64
1192	-1.58	-42.67	-2.87	-42.95	-2.64	-44.05	-1.35	-43.77	-1.84	-43.23	-2.41	-43.51
1193	-1.60	-42.54	-2.90	-42.82	-2.66	-43.91	-1.37	-43.64	-1.86	-42.60	-2.44	-43.38
1194	-1.63	-42.41	-2.93	-42.68	-2.69	-43.78	-1.40	-43.51	-1.89	-42.49	-2.47	-43.25
1195	-1.66	-42.26	-2.95	-42.54	-2.73	-43.65	-1.43	-43.41	-1.92	-42.37	-2.50	-43.12
1196	-1.68	-42.14	-2.98	-42.42	-2.75	-43.52	-1.45	-43.24	-1.94	-42.27	-2.53	-42.99
1197	-1.71	-42.01	-3.01	-42.29	-2.77	-43.39	-1.48	-43.11	-1.97	-42.18	-2.56	-42.86
1198	-1.73	-41.88	-3.04	-42.16	-2.80	-43.26	-1.51	-42.98	-2.00	-41.95	-2.57	-42.73
1199	-1.76	-41.75	-3.07	-42.03	-2.83	-43.12	-1.53	-42.85	-2.02	-41.82	-2.57	-42.60
1200	-1.77	-41.70	-3.07	-41.98	-2.84	-45.09	-1.53	-44.91	-2.03	-41.70	-2.60	-42.46
1201	-1.79	-41.57	-3.10	-41.85	-2.82	-44.95	-1.55	-44.81	-2.16	-44.77	-2.67	-42.35
1202	-1.82	-41.42	-3.13	-41.75	-2.89	-44.82	-1.58	-44.68	-2.05	-44.63	-2.63	-42.28
1203	-1.85	-41.30	-3.16	-41.58	-2.92	-44.69	-1.61	-44.41	-2.11	-44.24	-2.70	-42.15
1204	-1.87	-41.20	-3.15	-41.95	-2.95	-44.56	-1.64	-44.28	-2.14	-44.04	-2.74	-42.01
1205	-1.90	-41.03	-3.21	-41.31	-2.98	-44.42	-1.65	-44.14	-2.16	-43.86	-2.76	-41.88
1206	-1.92	-41.92	-3.24	-41.18	-3.00	-44.29	-1.69	-44.01	-2.19	-42.77	-2.79	-41.73
1207	-1.95	-42.76	-3.27	-41.85	-3.04	-41.03	-1.72	-41.68	-2.22	-41.34	-2.80	-41.52
1208	-1.82	-41.42	-3.30	-41.82	-3.05	-41.03	-1.74	-41.75	-2.24	-41.20	-2.82	-41.35
1209	-2.00	-42.49	-3.33	-42.77	-3.05	-41.89	-1.77	-41.61	-2.27	-41.07	-2.85	-41.32
1210	-2.03	-42.35	-3.35	-42.64	-3.11	-41.70	-1.80	-41.48	-2.30	-41.94	-2.88	-41.24
1211	-2.05	-42.22	-3.35	-42.51	-3.14	-41.63	-1.82	-41.35	-2.32	-41.80	-2.91	-41.22
1212	-2.06	-42.08	-3.42	-42.37	-3.17	-41.49	-1.85	-41.21	-2.35	-41.67	-2.94	-41.95
1213	-2.11	-41.55	-3.45	-41.82	-3.20	-41.36	-1.88	-41.06	-2.38	-41.53	-2.97	-42.82
1214	-2.13	-41.81	-3.48	-42.10	-3.23	-41.23	-1.90	-41.05	-2.40	-41.40	-3.02	-42.58
1215	-2.16	-41.67	-3.51	-41.96	-3.26	-41.09	-1.93	-41.81	-2.43	-41.33	-3.04	-42.55
2005	4.82	36.72	3.45	36.44	3.67	35.27	5.07	35.54	4.54	36.13	3.93	35.97
2006	4.79	36.55	3.42	36.57	3.55	35.55	5.04	35.58	4.51	36.26	3.93	35.98
2007	4.77	36.52	3.40	36.70	3.62	35.53	5.01	35.81	4.58	36.39	3.93	36.10
2008	4.74	37.11	3.37	36.83	3.60	35.67	4.98	35.94	4.46	36.52	3.91	36.24
2009	4.71	37.24	3.35	36.94	3.57	35.80	4.95	36.08	4.43	36.65	3.83	36.49
2010	4.69	37.37	3.32	37.09	3.55	35.93	4.92	36.21	4.40	36.78	3.80	36.55

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POSITION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION	FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
		A LAT	A LNG	B LAT	B LNG	C LAT	C LNG	D LAT	D LNG
2011	4-55	27.61	3.25	37.23	3.50	36.07	4.90	36.34	4.38
2012	4-63	37.64	3.27	37.36	4.87	36.47	4.35	37.04	3.75
2013	4-61	27.77	3.24	37.49	3.48	36.33	4.84	36.61	4.32
2014	4-58	37.50	3.22	37.75	3.43	36.47	4.81	36.74	4.30
2015	4-55	38.03	3.15	37.15	3.43	36.60	4.78	36.87	4.27
2016	4-52	38.16	3.17	37.68	3.40	36.73	4.76	37.00	4.24
2017	4-50	38.25	3.14	38.01	3.38	36.85	4.73	37.13	4.22
2018	4-47	38.42	3.12	38.14	3.35	36.99	4.70	37.27	4.19
2019	4-45	38.45	3.05	38.27	3.33	37.12	4.67	37.40	4.16
2020	4-42	38.66	3.06	38.40	3.30	37.26	4.65	37.53	4.14
2021	4-61	41.67	2.45	41.35	2.72	40.27	4.01	40.54	3.53
2022	4-79	41.81	2.42	41.52	2.69	40.40	3.59	40.67	3.50
2022	3.76	41.54	2.42	41.65	2.66	40.53	3.56	40.80	3.47
2024	3.73	42.07	2.37	41.78	2.64	40.66	3.49	40.93	3.45
2025	4.15	37.07	2.68	35.88	3.00	35.64	4.30	35.93	3.86
2026	4.12	37.22	2.53	37.02	2.97	35.79	4.27	36.08	3.83
2027	4.09	37.35	2.50	37.16	2.95	35.92	4.23	36.21	3.80
2028	4.07	37.50	2.57	37.30	2.92	36.07	4.21	36.36	3.77
2029	4.15	37.52	2.88	36.72	3.04	35.61	4.50	36.81	3.98
2030	4.13	37.13	2.86	36.84	3.01	35.73	4.43	35.93	3.86
2031	4.10	37.26	2.82	36.95	2.99	35.85	4.45	36.05	3.83
2032	4.08	37.38	2.81	37.65	2.56	35.98	4.42	36.18	3.81
2033	-32.68	148.02	14.72	155.06	12.26	-164.61	-34.95	-162.22	-10.96
2034	-11.62	153.25	35.20	143.25	24.49	-153.78	-17.24	-173.11	-44.36
2035	2.27	24.21	1.68	34.03	2.22	32.95	3.50	33.22	3.01
2036	2.24	24.43	1.96	34.16	2.19	33.07	3.47	33.35	3.01
2037	2.22	34.56	1.93	34.41	2.17	33.20	3.45	33.47	3.00
2038	2.19	34.68	1.90	34.41	2.14	33.32	3.42	33.59	2.93
2039	2.17	34.61	1.88	34.53	2.12	33.44	3.40	33.72	2.91
2040	2.15	34.52	1.85	34.65	2.09	33.57	3.37	33.84	2.98
2041	3.12	35.66	1.82	34.78	2.07	33.69	3.34	33.96	2.84
2042	3.10	35.16	1.80	34.90	2.04	33.81	3.32	34.08	2.83
2043	5.02	21.55	1.72	34.77	2.13	33.99	2.99	34.20	2.71
2044	5.05	21.72	3.75	21.46	3.96	20.34	5.29	20.47	4.81
2045	5.02	21.66	3.61	21.53	3.94	20.48	5.26	20.74	4.76
2046	5.05	21.55	3.65	21.52	3.92	20.57	5.23	20.88	4.73
2047	4.97	22.02	3.68	21.85	3.89	20.75	5.20	21.01	4.71
2048	4.94	22.25	3.65	21.98	3.87	20.88	5.18	21.14	4.68
2049	4.92	22.08	3.63	21.92	3.84	21.01	5.15	21.28	4.65
2050	4.89	22.51	3.60	22.24	3.82	21.15	5.12	21.41	4.62
2051	4.72	21.10	3.46	21.14	3.67	20.06	4.94	20.32	4.46
2052	4.69	21.52	3.43	21.26	3.65	20.19	4.92	20.45	4.43
2053	4.67	21.67	3.41	21.35	3.62	20.32	4.89	20.58	4.41
2054	4.64	21.78	3.38	21.52	3.60	20.45	4.86	20.71	4.38
2055	4.63	16.07	4.05	15.80	4.31	14.66	5.67	14.92	5.15
2060	4.40	16.20	4.07	15.63	4.25	14.79	5.64	15.06	5.13
2061	4.38	16.33	4.05	16.07	4.26	14.93	5.61	15.50	4.54
2062	4.35	16.47	4.02	16.20	4.24	15.07	5.58	15.33	4.49
2063						15.07	5.07	15.78	4.51

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				C LONG	D LAT	D LONG	A LAT	B LAT	C LONG	D LAT	C LONG
2064	5°32'	16°50'	-4°00'	16°33'	4°21'	15°20'	5°55'	5°55'	15°47'	5°05'	15°46'
2065	5°29'	16°57'	3°97'	16°46'	4°19'	15°34'	5°52'	15°60'	5°02'	16°04'	5°46'
2066	5°27'	16°56'	3°95'	16°59'	4°17'	15°47'	5°49'	15°74'	4°99'	16°29'	4°51'
2067	3°26'	2°05'	2°05'	2°47'	2°27'	23°77'	3°48'	2°03'	3°00'	2°24'	1°17'
2068	3°23'	2°03'	2°03'	2°48'	2°24'	23°89'	3°45'	2°12'	2°44'	2°50'	2°39'
2069	3°21'	2°00'	2°00'	2°50'	2°22'	24°01'	3°43'	2°24'	2°44'	2°51'	2°37'
2070	3°18'	1°58'	1°58'	2°13'	2°13'	24°13'	3°40'	2°36'	2°44'	2°51'	2°37'
2071	3°16'	1°55'	1°55'	2°17'	2°17'	24°26'	3°38'	2°49'	2°44'	2°51'	2°37'
2072	3°13'	1°52'	1°52'	2°37'	2°37'	24°38'	3°35'	2°61'	2°48'	2°54'	2°37'
2073	3°11'	1°50'	1°50'	2°50'	2°12'	24°50'	3°33'	2°73'	2°55'	2°54'	2°36'
2074	3°09'	1°47'	1°47'	2°52'	2°03'	24°53'	3°30'	2°86'	2°58'	2°54'	2°35'
2075	-48°59'	111°47'	-1°17'	140°42'	-0°58'	174°27'	-48°27'	-155°89'	-35°02'	155°62'	-11°92'
2076	1°73'	24°44'	0°42'	24°15'	0°47'	23°06'	1°95'	23°34'	1°46'	23°37'	0°89'
2077	1°70'	24°47'	0°39'	24°29'	0°54'	23°19'	1°93'	23°47'	1°44'	23°57'	0°92'
2078	1°68'	24°50'	0°36'	24°42'	0°61'	23°32'	1°91'	23°60'	1°41'	23°64'	0°90'
2079	1°65'	24°54'	0°33'	24°55'	0°58'	23°45'	1°85'	23°73'	1°38'	23°86'	0°84'
2080	1°63'	24°57'	0°30'	24°59'	0°55'	23°48'	1°86'	23°86'	1°35'	24°59'	1°41'
2081	1°60'	25°11'	0°27'	24°52'	0°52'	23°71'	1°83'	23°99'	1°33'	24°53'	1°39'
2082	1°57'	25°25'	0°24'	24°56'	0°49'	23°84'	1°80'	24°13'	1°30'	24°56'	1°36'
2083	1°55'	25°25'	0°21'	25°10'	0°46'	23°98'	1°78'	24°26'	1°27'	24°39'	1°33'
2084	1°53'	24°35'	0°02'	24°05'	0°28'	22°91'	1°62'	23°20'	1°10'	23°75'	0°51'
2085	1°53'	24°45'	-0°01'	24°19'	0°25'	21°59'	1°59'	23°33'	1°07'	23°89'	0°48'
2086	1°53'	24°49'	-0°03'	24°33'	0°21'	23°18'	1°56'	23°47'	1°05'	24°03'	0°45'
2087	1°50'	24°57'	-0°08'	24°47'	0°18'	23°31'	1°54'	23°61'	1°02'	24°16'	0°42'
2088	1°47'	24°51'	-0°11'	24°51'	0°16'	23°45'	1°51'	23°74'	0°99'	24°30'	0°39'
2089	1°25'	25°05'	-0°15'	24°75'	0°12'	23°58'	1°49'	23°88'	1°26'	24°47'	0°39'
2090	1°22'	25°20'	-0°18'	24°89'	0°09'	23°73'	1°46'	24°02'	0°10'	24°57'	0°36'
2091	1°19'	25°34'	-0°21'	25°06'	0°06'	23°87'	1°43'	24°16'	0°09'	24°58'	0°32'
2092	4°85'	5°30'	3°62'	4°93'	3°82'	4°01'	5.09'	4°17'	4.55'	4°71'	4.01'
2093	2°53'	0°04'	-3°60'	1°08'	-3°77'	-2.75'	-1°30'	1°75'	-0.67'	-7°06'	-4°04'
2094	1°12'	13°51'	0°19'	13°23'	0°06'	12°13'	1°35'	12°41'	0°85'	12°94'	0°28'
2095	2°87'	1°02'	-1°79'	0°78'	1°99'	-0°12'	3°05'	1°10'	2°65'	0°55'	2°18'
2096	2°35'	-1°50'	1°88'	-1°73'	2°07'	-2°64'	3°44'	-2°41'	2°73'	-1°97'	-2°07'
2097	2°53'	-1°39'	1°85'	-1°62'	-1°53'	-2°30'	3°12'	-2°30'	2°71'	-1°86'	-2°24'
2098	2°51'	-1°28'	1°83'	-1°63'	-2°03'	-2°42'	3°10'	-2°19'	2°69'	-1°75'	-2°21'
2099	2°48'	-1°16'	1°80'	-1°39'	-2.00'	-2.07'	3°07'	-2°08'	2°66'	-1°64'	-2°19'
2100	2°46'	-1°05'	1°78'	-1°28'	-1°98'	-2°77'	2°71'	-2°47'	2°36'	-2°04'	-2°14'
2101	2°34'	-0°54'	1°76'	-1°17'	-1°96'	-2°60'	2°74'	-2°37'	2°33'	-1°93'	-2°16'
2102	2°33'	-1°24'	-1°44'	-1°57'	-1°64'	-2°49'	2°03'	-2°08'	2°26'	-1°52'	-2°05'
2103	2°19'	-0°71'	1°71'	-0°94'	1°91'	-1°85'	2°17'	-2°15'	2°29'	-1°80'	-1°42'
2104	2°10'	-0°50'	1°68'	-1°63'	-1°91'	-2°63'	2°79'	-2°60'	2°10'	-1°59'	-1°30'
2105	2°08'	-1°58'	1°57'	-1°80'	-1°80'	-2°60'	2°77'	-2°58'	2°16'	-1°57'	-1°28'
2106	2°06'	-1°48'	1°47'	-1°49'	-1°81'	-2°69'	2°77'	-2°49'	2°24'	-1°57'	-1°28'
2107	2°53'	-1°19'	1°44'	-1°44'	-1°47'	-2°66'	2°74'	-2°37'	2°33'	-1°93'	-2°16'
2108	2°41'	-1°22'	1°42'	-1°42'	-1°45'	-2°57'	2°70'	-2°37'	2°29'	-1°70'	-2°04'
2109	2°09'	-1°11'	1°35'	-1°34'	-1°59'	-2°26'	2°67'	-2°03'	2°57'	-1°81'	-1°82'
2110	2°47'	-0°99'	1°37'	-1°68'	-1°62'	-2°15'	2°79'	-2°24'	2°47'	-1°76'	-1°71'
2111	2°44'	-0°88'	1°34'	-1°11'	-1°54'	-2°03'	2°63'	-2°22'	2°19'	-1°57'	-1°59'
2112	3°71'	-11°09'	2°61'	-11°32'	2°81'	-12°25'	3°91'	-12°02'	3°49'	-11°57'	-1°48'
2113	1°20'	-0°59'	-0°04'	-0°48'	-0°05'	-2°08'	1°42'	-1°63'	1°42'	-1°91'	-1°59'
2114	1°17'	-0°42'	-0°07'	-0°73'	0°17'	-1°77'	1°39'	-1°50'	0°95'	-1°13'	-1°38'
2115	1°15'	-0°32'	-0°10'	-0°60'	0°14'	-1°65'	1°37'	-1°37'	0°90'	-1°12'	-1°26'
2116	1°12'	-0°15'	-0°13'	-0°47'	-0°11'	-1°52'	1°34'	-1°25'	-0.87'	-0°35'	-1°13'

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MISSION/ FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
	A LAT	B LAT	C LONG	D LONG	A LAT	B LAT	C LONG	D LONG
2117 1.10	-0.05	-0.16	-0.34	0.08	-1.39	1.32	-1.12	0.84
2118 1.07	0.07	-0.19	-0.21	0.05	-1.26	1.29	-0.99	0.82
2119 1.05	0.20	-0.23	-0.08	0.03	-1.14	1.27	-0.86	0.79
2120 1.02	0.24	-0.26	0.06	-0.06	-1.01	1.24	-0.73	0.76
2121 0.95	-0.70	-0.45	-0.99	-0.20	-2.08	1.08	-1.80	0.59
2122 0.82	-0.57	-0.49	-0.85	-0.23	-1.95	1.05	-1.67	0.56
2123 0.80	-0.43	-0.52	-0.72	-0.26	-1.82	1.03	-1.53	0.53
2124 0.77	-0.29	-0.35	-0.58	-0.30	-1.68	1.00	-1.40	0.50
2125 0.75	-0.15	-0.59	-0.44	-0.33	-1.55	0.98	-1.26	0.48
2126 0.72	-0.01	-0.62	-0.30	-0.36	-1.42	0.95	-1.13	0.45
2127 0.69	0.13	-0.65	-0.16	-0.16	-1.39	1.28	-0.92	0.42
2128 0.67	0.28	-0.65	-0.02	-0.42	-1.15	0.90	-0.86	0.39
2129 0.52	-0.89	-0.86	-1.19	-0.59	-2.34	0.76	-2.05	0.24
2130 0.49	-0.74	-0.89	-1.05	-0.62	-2.20	0.74	-1.91	0.21
2131 0.47	-0.59	-0.93	-0.90	-0.66	-2.06	0.71	-1.76	0.18
2132 0.44	-0.44	-0.96	-0.75	-0.69	-1.92	0.68	-1.62	0.16
2133 0.41	-0.29	-1.00	-0.60	-0.72	-1.78	0.65	-1.48	0.13
2134 0.38	-0.14	-1.04	-0.45	-0.76	-1.64	0.63	-1.33	0.10
2135 0.36	0.01	-1.07	-0.30	-0.79	-1.49	0.60	-1.19	0.07
2136 0.33	0.17	-1.11	-0.82	-0.82	-1.34	0.57	-1.04	0.04
2137 5.66	-26.01	4.12	-26.17	4.34	-27.92	5.70	-27.65	5.18
2138 1.73	-12.63	0.56	-12.59	0.78	-13.87	1.94	-13.63	1.49
2139 1.71	-12.51	0.52	-12.76	0.75	-13.75	1.91	-13.50	1.47
2140 1.68	-12.68	0.50	-12.64	0.67	-13.63	1.89	-13.38	1.44
2141 1.65	-12.25	0.47	-12.51	0.70	-13.50	1.86	-13.26	1.42
2142 1.64	-12.13	0.44	-12.39	0.64	-13.38	1.84	-13.14	1.40
2143 1.61	-12.00	0.42	-12.26	0.64	-13.26	1.81	-13.01	1.36
2144 1.59	-11.88	0.39	-12.14	0.61	-13.14	1.79	-12.89	1.34
2145 1.56	-11.75	0.36	-12.01	0.59	-13.01	1.76	-12.77	1.31
2146 4.26	-26.86	3.07	-27.11	3.28	-28.12	4.47	-27.87	4.02
2147 4.23	-26.74	3.05	-26.93	3.25	-27.99	4.45	-27.74	3.99
2148 4.21	-26.62	3.03	-26.85	3.21	-27.87	4.42	-27.62	3.97
2149 4.18	-25.50	3.00	-26.74	3.21	-27.39	4.39	-27.50	3.94
2150 4.15	-25.37	2.98	-26.62	3.18	-27.62	4.37	-27.37	3.92
2151 4.13	-26.25	2.95	-26.50	3.16	-27.49	4.34	-27.25	3.89
2152 4.10	-26.13	2.93	-26.38	3.14	-27.37	4.31	-27.13	3.86
2153 4.08	-26.01	2.91	-26.25	3.11	-27.25	4.29	-27.00	3.84
2154 3.85	-26.86	2.70	-27.10	2.90	-28.08	4.06	-27.84	3.62
2155 3.83	-25.74	2.67	-26.67	2.93	-27.96	4.04	-27.72	3.59
2156 3.80	-26.62	2.65	-26.86	2.85	-27.84	4.01	-27.60	3.57
2157 3.78	-26.50	2.63	-26.75	2.83	-27.72	3.98	-27.48	3.54
2158 3.75	-26.38	2.60	-26.63	2.81	-27.60	3.95	-27.36	3.52
2159 3.73	-26.26	2.58	-26.51	2.78	-27.48	3.93	-27.24	3.49
2160 3.70	-26.14	2.55	-26.38	2.76	-27.35	3.91	-27.11	3.47
2161 3.68	-26.02	2.53	-26.26	2.74	-27.23	3.88	-27.00	3.44
2162 3.65	-16.55	2.61	-19.32	2.71	-20.78	7.05	-22.16	13.03
2163 0.72	-19.37	0.63	-19.66	0.37	-20.80	0.96	-20.50	0.45
2164 0.70	-19.22	0.66	-19.52	0.40	-20.66	0.94	-20.37	0.42
2165 0.67	-19.08	0.65	-19.38	0.43	-20.52	0.91	-20.23	0.40
2166 0.65	-18.94	0.73	-19.24	0.46	-20.38	0.88	-20.09	0.37
2167 0.62	-18.79	0.76	-19.09	0.49	-20.24	0.85	-19.82	0.23
2168 0.59	-18.64	0.80	-18.95	0.52	-20.10	0.83	-19.52	0.23
2169 0.56	-18.49	0.83	-18.80	0.56	-19.96	0.80	-19.39	0.31

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	A LAT	B LAT	C LAT	D LAT	A LONG	B LONG	C LONG	D LONG
2170	0.34	-16.34	-18.67	-18.65	-0.53	-19.82	0.77	-19.52
2171	0.36	-19.33	-1.09	-19.64	-0.81	-20.65	0.60	-20.54
2172	0.33	-19.17	-1.13	-19.49	-0.84	-20.70	0.57	-20.39
2173	0.30	-19.02	-1.16	-19.34	-0.88	-20.55	0.55	-20.24
2174	0.27	-18.66	-1.20	-19.18	-0.91	-20.40	0.52	-20.09
2175	0.24	-18.70	-1.24	-19.03	-0.94	-20.25	0.49	-19.94
2176	0.21	-18.54	-1.27	-18.87	-0.98	-20.10	0.46	-19.66
2177	0.19	-18.38	-1.31	-18.71	-1.01	-19.95	0.43	-19.51
2178	0.16	-18.22	-1.35	-18.55	-1.05	-19.80	0.40	-19.48
2179	2.91	-33.80	-1.71	-34.05	1.93	-35.26	3.12	-36.81
2180	2.88	-33.67	1.69	-33.93	1.91	-36.94	3.09	-34.68
2181	2.85	-33.53	1.66	-33.81	1.88	-36.82	3.07	-34.56
2182	2.83	-33.43	1.64	-33.69	1.86	-36.69	3.04	-34.44
2183	2.81	-33.31	1.61	-33.57	1.83	-36.57	3.02	-34.32
2184	2.78	-33.19	1.58	-33.44	1.81	-36.45	2.99	-34.20
2185	2.76	-33.06	1.56	-33.32	1.76	-36.33	2.97	-34.08
2186	2.73	-22.94	1.53	-33.20	1.76	-36.21	2.94	-33.97
2187	2.49	-33.71	1.28	-33.97	1.51	-34.99	2.70	-36.73
2188	2.47	-33.56	1.25	-33.85	1.48	-34.86	2.68	-36.61
2189	2.44	-33.46	1.23	-33.72	1.46	-34.74	2.65	-36.48
2190	2.42	-33.34	1.20	-33.60	1.43	-34.62	2.63	-36.32
2191	2.39	-23.21	1.17	-33.48	1.40	-34.50	2.60	-36.24
2192	2.37	-23.05	1.15	-33.35	1.38	-34.37	2.58	-36.12
2193	2.34	-22.86	1.12	-33.23	1.35	-34.25	2.55	-36.00
2194	2.32	-22.64	1.09	-33.10	1.33	-34.13	2.52	-35.87
2195	2.35	-42.32	2.08	-42.30	2.32	-43.37	2.57	-33.87
	-3.235	73.54	17.76	79.69	15.68	123.48	3.45	12.87
2196	2.41	-41.59	1.14	-41.76	1.38	-42.83	2.64	-42.56
2197	2.39	-41.36	1.12	-41.63	1.20	-42.70	2.61	-42.43
2198	2.36	-41.23	1.09	-41.50	1.33	-42.57	2.58	-42.30
2200	2.33	-41.10	1.06	-41.38	1.30	-42.45	2.56	-42.18
2201	2.31	-40.57	1.03	-41.25	1.27	-42.32	2.53	-42.05
2202	2.28	-40.54	1.01	-41.12	1.25	-42.19	2.50	-41.92
2203	2.26	-40.52	0.98	-40.99	1.22	-42.06	2.48	-41.79
2204	2.23	-40.59	0.95	-40.87	1.19	-41.94	2.45	-41.67
2205	2.01	-41.12	0.71	-41.70	0.95	-42.79	2.23	-42.52
2206	1.98	-41.29	0.68	-41.97	0.93	-42.66	2.21	-42.31
2207	1.96	-41.16	0.65	-41.44	0.90	-42.53	2.18	-42.26
2208	1.93	-41.03	0.63	-41.31	0.87	-42.40	2.15	-42.13
2209	1.90	-40.89	0.60	-41.70	0.85	-42.27	2.13	-41.97
2210	1.88	-40.76	0.57	-41.93	0.82	-42.14	2.10	-41.87
2211	1.85	-40.63	0.54	-40.92	0.79	-42.01	2.08	-41.74
2212	1.83	-40.50	0.51	-40.79	0.76	-41.88	2.05	-41.61
2213	1.81	-40.57	0.49	-40.91	0.74	-41.61	2.03	-41.55
2214	3.40	-22.90	2.08	-23.18	2.32	-24.29	3.24	-25.22
2215	1.95	-43.42	4.80	-57.70	5.14	-60.17	10.35	-19.11
3005	3.61	25.14	2.11	59.15	14.94	-60.17	10.35	-53.62
3006	3.55	35.29	2.05	34.57	2.58	33.86	3.40	-57.53
3007	3.49	35.43	2.00	34.87	2.47	33.52	3.41	-54.26
3008	3.44	35.58	1.95	35.02	2.42	33.74	3.42	-54.41
3009	3.45	35.72	1.89	35.16	2.36	33.88	3.43	-54.55
3010	3.33	35.87	1.84	35.31	2.31	34.03	3.41	-54.85
3011	3.27	36.01	1.79	35.45	2.26	34.19	3.39	-54.99

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	A LAT	B LAT	C LAT	D LONG	A LAT	B LAT	C LAT	D LONG
3012	36.16	1.73	35.60	2.20	34.34	3.59	34.90	3.90
3013	36.30	1.68	35.74	2.15	34.48	3.64	35.05	2.95
3014	36.45	1.63	35.89	2.10	34.63	3.58	35.19	2.89
3015	36.59	1.57	36.03	2.04	34.78	3.52	35.34	2.84
3016	2.99	1.52	36.18	1.99	34.93	3.46	35.49	2.78
3017	2.93	1.47	36.32	1.94	35.07	3.40	35.63	2.73
3018	2.88	1.41	36.46	1.89	35.22	3.35	35.77	2.67
3019	2.82	1.36	36.60	1.83	35.37	3.29	35.92	2.62
3020	2.77	1.31	36.75	1.78	35.51	3.23	36.06	1.92
3021	-1.29	48.13	-2.91	47.53	-2.31	46.26	-0.91	46.78
3022	-1.34	48.27	-2.57	47.67	-2.36	46.40	-0.95	46.62
3023	-1.39	48.42	-3.03	47.81	-2.41	46.54	-1.02	47.05
3024	-1.44	48.57	-3.09	47.96	-2.47	46.68	-1.07	47.20
3025	-0.23	42.64	-1.76	42.94	-1.30	41.30	0.11	41.67
3026	-0.38	42.98	-1.82	42.47	-1.35	41.23	0.06	41.80
3027	-0.43	43.11	-1.87	42.61	-1.40	41.37	0.01	41.94
3028	-0.48	43.25	-1.93	42.74	-1.45	41.51	-0.04	42.08
3029	-0.53	43.38	-1.98	42.88	-1.50	41.64	-0.09	42.20
3030	-0.58	43.52	-2.03	43.01	-1.56	41.77	-0.14	42.34
3031	-0.63	43.66	-2.09	43.15	-1.61	41.91	-0.19	42.48
3032	-0.68	43.79	-2.14	43.28	-1.66	42.04	-0.25	42.61
3033	-0.26	43.93	-1.86	42.83	-1.43	41.71	0.31	42.15
3034	-0.31	43.82	-1.91	42.98	-1.48	41.85	0.26	42.29
3035	-0.36	43.56	-1.97	43.31	-1.54	41.99	0.21	42.43
3036	-0.41	44.20	-2.02	43.25	-1.59	42.42	0.16	42.75
3037	-16.51	56.27	-15.27	107.56	-24.10	109.53	-26.01	97.13
3038	-2.71	40.02	-12.13	39.38	-12.78	30.64	-3.15	38.66
3039	-0.36	27.97	-6.91	18.14	-1.02	26.17	1.84	26.82
3040	4.69	20.56	-2.34	19.91	-2.86	18.33	4.54	19.85
3041	3.86	20.52	-2.13	20.53	-2.66	18.93	4.30	19.79
3042	3.63	21.58	-1.92	21.15	-2.45	19.62	4.06	20.42
3043	3.40	22.18	-1.71	21.74	-2.25	20.25	3.82	21.03
3044	1.14	21.93	-0.15	27.39	-0.26	26.32	1.58	26.79
3045	1.09	28.06	-0.20	27.52	-0.21	26.45	1.53	26.92
3046	1.32	28.19	-0.25	27.65	-0.16	26.58	1.48	27.05
3047	1.20	28.22	-0.30	27.78	-0.11	26.71	1.43	27.18
3048	0.95	28.45	-0.35	27.91	-0.06	26.84	1.38	27.31
3049	0.90	28.71	-0.45	28.04	-0.01	26.97	1.33	27.44
3050	0.65	28.71	-0.45	28.17	-0.04	27.10	1.28	27.57
3051	0.80	28.64	-0.50	28.30	-0.09	27.23	1.23	27.70
3052	0.24	25.63	-0.74	25.23	-0.32	23.97	1.02	24.61
3053	0.89	24.97	-0.54	24.57	-0.07	23.31	1.28	24.75
3054	0.84	25.10	-0.59	24.70	-0.12	23.44	1.22	24.09
3055	0.79	25.24	-0.64	24.84	-0.17	23.58	1.17	24.22
3056	0.69	25.37	-0.69	24.97	-0.22	23.71	1.12	24.35
3057	0.60	25.51	-0.74	25.10	-0.27	23.84	1.07	24.48
3058	0.59	25.64	-0.74	25.23	-0.32	23.97	1.02	24.61
3059	0.54	25.89	-0.90	25.43	-0.42	24.24	0.92	24.88
3060	0.59	25.09	-0.24	24.84	-0.09	23.48	1.46	24.40
3061	0.55	25.21	-0.34	24.61	-0.04	23.60	1.41	24.53
3062	3.90	25.25	-0.39	24.75	-0.01	23.74	1.35	24.16
3063	0.65	25.47	-0.44	24.87	-0.06	23.86	1.30	24.56
3064	0.80	25.61	-0.50	24.00	-0.11	24.00	1.25	24.42

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	A LAT	A LGNG	B LAT	B LGNG	C LAT	C LGNG	D LAT	D LGNG
3065	0°76	25°74	-0°55	25°14	24°13	-0°16	25°05	-0°05
3066	0°70	25°27	-0°60	25°27	-0°22	24°26	1°15	24°55
3067	0°65	26°C1	-0°55	25°40	24°40	1°09	24°68	0°48
3068	0°71	21°73	-0°59	21°31	-0°17	20°18	1°09	20°72
3069	0°51	22°23	-0°78	21°81	-0°36	20°68	0°89	21°22
3070	0°31	22°74	-0°98	22°31	-0°55	21°19	0°69	21°73
3071	0°12	23°24	-1°18	22°82	-0°24	21°70	0°49	22°23
3072	-0°19	25°37	-1°45	24°58	-1°28	23°60	0°33	23°97
3073	1°07	14°56	5°84	6°70	5°28	17°33	6°38	8°90
3074	4°52	7°07	3°07	6°52	3°53	5°28	4°99	5°84
3075	4°28	7°65	2°85	7°11	3°31	5°90	4°73	6°44
3076	4°04	8°22	2°64	7°59	3°09	6°50	4°59	7°03
3077	3°81	8°79	2°42	8°27	2°88	7°10	4°24	7°52
3078	-7°07	2°73	-17°65	31°06	-12°37	23°53	-6°57	25°95
3079	-1°39	18°47	-2°59	17°90	-2°19	16°93	-0°33	17°38
3080	-1°32	13°49	-2°19	13°21	-1°82	12°24	-0°52	12°66
3081	-1°19	14°17	-2°38	13°58	-2°00	12°71	-0°81	13°13
3082	-1°37	14°65	-2°57	14°15	-2°19	13°18	-0°59	13°60
3083	-1°45	15°13	-2°76	14°63	-2°37	13°65	-1°17	14°07
3084	1°22	1°70	-5°49	-6°12	0°15	0°52	1°17	1°52
3085	1°24	7°39	3°34	-0°31	3°85	-1°48	1°47	2°60
3086	1°43	-0°51	0°09	-1°26	0°57	-2°61	1°98	-1°83
3087	1°57	-0°77	0°04	-1°12	0°53	-2°47	1°93	-1°69
3088	1°52	-0°64	-0°01	-0°49	0°48	-2°33	1°87	-1°56
3089	1°47	-0°50	-0°06	-0°45	0°43	-2°19	1°82	-1°42
3090	1°42	-0°37	-0°11	-0°22	0°15	-2°05	1°77	-1°29
3091	1°37	-0°24	-0°16	-0°59	0°34	-1°32	1°72	-1°15
3092	1°32	-0°11	-0°20	-0°46	0°30	-1°78	1°67	-1°02
3093	1°27	-0°02	-0°25	-0°33	0°25	-1°65	1°62	-0°89
3094	1°29	-0°56	-0°08	-1°34	0°48	-2°41	1°64	-1°87
3095	1°24	-0°84	-0°22	-0°22	0°44	-1°50	1°47	-1°47
3096	1°20	-0°72	-0°31	-1°11	-0°39	-2°17	1°55	-1°35
3097	1°15	-0°60	-0°40	-0°59	0°35	-2°04	1°50	-1°51
3098	1°11	-0°49	-0°10	-0°87	0°31	-1°92	1°46	-1°15
3099	1°06	-0°37	-0°14	-0°75	0°25	-1°80	1°41	-1°07
3100	1°01	-0°25	-0°13	-0°63	0°22	-1°68	1°36	-0°92
3101	0°57	-0°13	-0°24	-0°51	0°17	-1°55	1°31	-1°03
3102	0°09	-7°61	3°78	4°15	-6°74	4°15	-6°51	5°42
3103	1°32	-5°54	-0°05	-5°50	0°40	-7°12	1°68	-6°44
3104	1°13	-5°04	-0°33	-5°40	0°22	-6°60	1°48	-5°93
3105	0°94	-4°54	-0°42	-4°90	0°04	-6°09	1°48	-5°99
3106	0°74	-4°04	-0°51	-4°40	-0°14	-5°58	1°09	-5°53
3107	-0°01	-4°52	-1°14	-5°34	-0°75	-6°51	1°31	-5°68
3108	-3°54	4°08	-5°23	-3°78	-6°51	-6°31	0°34	-5°83
3109	-4°13	4°62	-5°35	-4°81	-4°81	-2°49	-3°53	-2°99
3110	-4°33	5°17	-5°67	4°66	-5°22	3°01	-3°72	3°51
3111	-4°52	5°74	-5°89	5°21	-5°43	3°54	-4°07	3°91
3112	-1°35	-7°51	-3°37	-7°84	-2°76	-9°52	-1°40	-5°07
3113	-1°41	-7°36	-3°43	-7°70	-2°81	-9°38	-1°07	-6°25
3114	-1°46	-7°22	-3°45	-7°56	-2°86	-9°23	-1°12	-6°25
3115	-1°52	-7°08	-3°55	-7°41	-2°91	-9°09	-1°18	-6°59
3116	-2°72	-3°69	-3°93	-4°10	-3°53	-6°15	-2°36	-6°51
3117	-2°91	-3°20	-4°13	-3°62	-3°72	-4°67	-2°54	-3°54

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	A LAT	B LAT	C LAT	D LAT	E LONG	F LONG	G LAT	H LAT	I LONG	J LONG	K LAT	L LONG
3118	-3.09	-2.70	-4.33	-3.12	-4.19	-2.72	-3.68	-3.26	-3.46	-3.73	-3.59	-3.39
3119	-3.28	-2.19	-4.54	-2.61	-4.10	-3.69	-2.91	-3.18	-3.44	-3.98	-3.10	-3.39
3120	-5.62	-17.07	-6.65	-24.69	-1.45	-18.26	0.85	-18.35	-0.33	-18.19	-2.17	-18.47
3121	-5C-03	80.48	-4.17	06.95	142.81	51.39	177.74	-35.99	123.68	-15.13	128.59	-35.75
3122	1.48	-21.20	0.06	+21.57	0.52	-22.83	1.84	-22.16	1.32	-21.74	0.73	-21.87
3123	1.47	-22.67	4.65	-27.01	5.14	-28.67	10.91	-30.28	15.70	-26.51	5.85	-27.54
3124	-0.24	-19.38	-1.39	-19.83	-1.01	-20.80	0.14	-20.36	-0.19	-19.94	-0.90	-20.14
3125	-0.56	-16.27	-1.43	-19.71	-1.06	-20.68	0.09	-20.24	-0.44	-19.82	-0.95	-20.01
3126	-0.33	-19.48	-1.48	-19.59	-1.10	-20.56	0.04	-20.12	-0.49	-19.70	-0.99	-19.94
3127	-C-38	-19.03	-1.53	-19.47	-1.15	-20.44	-0.00	-20.00	-0.53	-19.58	-0.94	-20.02
3128	-0.42	-18.02	-1.57	-19.35	-1.24	-20.32	-0.05	-19.98	-0.58	-19.45	-1.09	-19.97
3129	-C-07	-18.79	-1.62	-19.23	-1.24	-20.20	-0.10	-19.76	-0.63	-19.34	-1.13	-19.54
3130	-0.52	-18.67	-1.67	-19.11	-1.29	-20.38	-0.15	-19.64	-0.67	-19.22	-1.18	-19.35
3131	-0.56	-18.55	-1.72	-18.99	-1.26	-19.96	-0.19	-19.52	-0.72	-19.11	-1.23	-19.23
3132	-2.76	-17.24	-4.73	-17.60	-4.31	-19.26	-2.40	-18.17	-2.93	-17.76	-3.69	-18.04
3133	-2.58	-16.65	-4.98	-17.02	-4.33	-18.68	-2.62	-17.59	-3.16	-17.19	-3.92	-17.30
3134	-3.21	-16.06	-5.25	-16.56	-4.56	-18.09	-2.84	-17.91	-3.29	-16.61	-4.16	-16.88
3135	-2.44	-15.47	-5.51	-15.84	-4.79	-17.51	-3.07	-16.62	-3.52	-16.02	-4.40	-16.30
3136	-2.96	-20.50	-9.24	-28.64	-2.12	-28.90	-1.77	-21.71	-2.81	-21.90	-4.54	-25.71
3137	-2.36	-22.65	-2.65	-23.03	-4.11	-23.65	-2.06	-21.98	-2.56	-23.22	-3.49	-23.54
3138	-2.42	-22.49	-4.93	-22.87	-4.17	-24.90	-2.04	-23.69	-2.62	-23.06	-3.55	-23.39
3139	-2.48	-22.32	-5.01	-22.71	-4.22	-24.74	-2.10	-23.33	-2.69	-22.90	-3.61	-23.23
3140	-2.54	-22.18	-5.25	-22.55	-4.56	-24.58	-2.16	-23.18	-2.75	-23.67	-4.16	-23.59
3141	-2.60	-22.02	-5.14	-22.40	-4.34	-24.42	-2.22	-23.02	-2.81	-22.59	-4.20	-24.24
3142	-2.66	-21.86	-5.21	-22.24	-4.40	-24.26	-2.28	-22.86	-2.87	-22.43	-3.80	-22.76
3143	-2.73	-21.70	-5.29	-22.08	-4.46	-24.11	-2.34	-22.71	-2.93	-22.60	-3.86	-22.45
3144	-2.79	-21.44	-5.36	-21.92	-4.51	-23.95	-2.40	-22.55	-2.99	-22.12	-3.84	-22.65
3145	-2.29	-22.38	-3.61	-22.80	-3.17	-23.95	-1.91	-23.40	-2.45	-22.95	-3.02	-23.53
3146	-2.34	-22.25	-3.66	-22.67	-3.22	-23.83	-1.95	-23.27	-2.50	-22.82	-3.67	-23.03
3147	-2.38	-22.12	-3.71	-22.55	-3.27	-23.70	-2.00	-23.14	-2.55	-22.70	-3.74	-22.92
3148	-2.43	-21.59	-3.77	-22.44	-3.32	-23.57	-2.05	-23.01	-2.50	-22.57	-3.17	-22.78
3149	-2.48	-21.87	-3.82	-22.29	-3.37	-23.44	-2.10	-22.89	-2.65	-22.44	-3.28	-22.65
3150	-2.53	-21.74	-3.87	-22.16	-3.41	-23.32	-2.15	-22.76	-2.69	-22.32	-3.27	-22.53
3151	-2.58	-21.61	-3.61	-22.03	-3.46	-23.19	-2.20	-22.63	-2.74	-22.81	-3.32	-22.63
3152	-2.62	-21.48	-3.97	-22.55	-3.51	-23.57	-2.24	-23.22	-2.51	-22.68	-3.53	-22.77
3153	-2.82	-22.70	-3.81	-22.51	-3.40	-23.48	-2.11	-23.81	-2.71	-23.33	-3.28	-23.55
3154	-2.57	-22.57	-3.86	-22.07	-3.45	-24.15	-2.15	-23.68	-2.50	-23.20	-3.33	-23.42
3155	-2.61	-22.44	-3.91	-22.94	-3.50	-24.03	-2.20	-23.56	-2.81	-23.57	-3.38	-23.59
3156	-2.66	-22.20	-3.97	-22.81	-3.55	-23.90	-2.25	-23.43	-2.85	-23.43	-3.16	-23.43
3157	-2.71	-22.17	-4.02	-22.68	-3.60	-23.77	-2.30	-23.30	-2.80	-22.81	-3.67	-23.17
3158	-2.76	-22.04	-4.07	-22.55	-3.65	-23.64	-2.35	-23.17	-2.95	-22.68	-3.53	-23.47
3159	-2.80	-21.91	-4.12	-22.42	-3.70	-23.51	-2.40	-23.04	-3.00	-22.55	-3.52	-23.48
3160	-2.85	-21.77	-4.17	-22.29	-3.75	-23.35	-2.44	-22.91	-3.05	-22.42	-3.57	-22.57
3161	-2.42	-29.60	0.37	-40.03	-2.45	-47.92	6.54	-49.37	2.25	-41.28	0.78	-41.82
3162	12.29	-30.76	3.27	-38.65	4.01	-40.24	9.97	-39.91	10.65	-36.07	4.66	-38.84
3163	2.36	-41.26	0.89	-42.13	1.32	-43.21	2.95	-42.76	2.09	-42.18	1.43	-42.61
3164	2.31	-41.21	0.84	-41.59	1.27	-43.06	2.89	-42.61	2.04	-42.04	1.37	-42.43
3165	2.25	-41.07	0.77	-41.84	1.21	-42.92	2.83	-42.47	1.98	-41.89	1.38	-42.32
3166	2.19	-40.53	0.73	-41.70	1.16	-42.77	2.77	-42.32	1.92	-41.75	1.26	-42.03
3167	2.14	-40.75	0.68	-41.55	1.10	-42.63	2.71	-42.18	1.87	-41.61	1.21	-41.78
3168	2.08	-40.64	0.62	-41.42	1.05	-42.48	2.65	-42.04	1.81	-41.47	1.15	-41.63
3169	2.02	-40.53	0.57	-41.27	0.99	-42.34	2.59	-41.89	1.75	-41.33	1.10	-41.49
3170	1.97	-40.36	0.51	-41.13	0.94	-42.19	2.53	-41.75	1.70	-41.18	1.10	-41.60

MISSION/N. CORNERS	CORNER COORDINATES - HIGH RESOLUTION				CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - LOW RESOLUTION							
	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG
3171	-34.61	-10.43	-42.93	-2.61	-46.24	-2.32	-35.68	-0.51	-34.49	-35.70	-5.11	-39.15	-4.87	-40.30	-3.29	-35.92
3172	-2.02	-41.16	-9.70	-50.66	-0.61	-53.10	-0.51	-1.92	-42.44	-4.80	-39.02	-4.69	-52.04	-1.69	-42.71	-0.51
3173	-2.80	-36.46	-4.17	-36.94	-3.72	-38.10	-2.39	-2.99	-37.98	-4.80	-37.08	-4.63	-37.31	-2.93	-37.46	-2.93
3174	-2.85	-36.32	-4.22	-36.80	-3.78	-37.97	-2.44	-37.44	-3.64	-3.63	-3.63	-3.52	-37.32	-2.93	-37.46	-2.93
3175	-2.90	-36.16	-4.33	-36.66	-3.83	-37.83	-2.59	-3.60	-3.64	-3.63	-3.58	-3.52	-37.17	-2.93	-37.32	-2.93
3176	-2.95	-36.04	-4.33	-36.52	-3.88	-37.70	-2.54	-37.16	-3.69	-3.69	-3.63	-3.52	-37.03	-2.93	-37.18	-3.03
3177	-3.00	-35.89	-4.39	-36.38	-3.93	-37.56	-2.59	-3.54	-3.67	-3.74	-3.68	-3.57	-37.04	-3.08	-36.82	-3.08
3178	-3.05	-35.75	-4.44	-36.24	-3.90	-37.49	-2.59	-3.50	-3.67	-3.74	-3.68	-3.57	-36.91	-3.14	-36.66	-3.14
3179	-3.10	-35.61	-4.50	-36.10	-3.94	-37.42	-2.54	-3.49	-3.62	-3.73	-3.65	-3.57	-36.77	-3.19	-36.54	-3.19
3180	-3.15	-35.47	-4.55	-35.95	-3.99	-37.14	-2.75	-3.60	-3.75	-3.80	-3.63	-3.57	-36.63	-3.24	-36.40	-3.24
3181	-1.76	-42.71	-3.38	-43.12	-2.85	-44.77	-1.36	-4.33	-4.30	-4.30	-4.30	-4.29	-43.89	-3.49	-43.25	-3.49
3182	-1.81	-42.57	-3.44	-42.95	-2.90	-44.39	-2.42	-4.33	-4.30	-4.26	-4.26	-4.25	-43.55	-3.55	-43.45	-3.55
3183	-1.87	-42.42	-3.49	-42.83	-2.95	-44.25	-1.67	-4.34	-4.30	-4.24	-4.24	-4.23	-43.40	-3.60	-43.31	-3.60
3184	-1.92	-42.29	-3.55	-42.69	-3.00	-44.11	-1.52	-4.33	-4.30	-4.20	-4.20	-4.19	-43.25	-3.57	-43.21	-3.57
3185	-1.95	-43.08	-3.34	-43.56	-2.85	-44.86	-0.94	-4.33	-4.30	-4.20	-4.20	-4.19	-43.43	-3.43	-43.07	-3.43
3186	-1.98	-43.74	-3.35	-44.17	-2.90	-45.49	-1.49	-4.49	-4.46	-4.32	-4.32	-4.31	-43.86	-2.04	-43.03	-2.04
3187	-1.95	-43.60	-3.45	-44.03	-2.95	-45.34	-1.54	-4.54	-4.50	-4.38	-4.38	-4.37	-44.74	-2.02	-44.49	-2.02
3188	-2.01	-43.45	-3.50	-43.98	-3.00	-45.20	-1.60	-4.54	-4.50	-4.42	-4.42	-4.41	-44.60	-2.07	-44.35	-2.07
3189	-2.06	-43.21	-3.56	-43.75	-3.05	-45.06	-1.65	-4.50	-4.46	-4.38	-4.38	-4.37	-44.29	-2.13	-44.21	-2.13
3190	-2.11	-43.17	-3.61	-43.61	-3.11	-44.92	-1.70	-4.55	-4.50	-4.42	-4.42	-4.41	-44.15	-2.13	-44.07	-2.13
3191	-2.17	-43.03	-3.67	-43.47	-3.16	-44.76	-1.75	-4.52	-4.47	-4.38	-4.38	-4.37	-44.31	-2.13	-43.93	-2.13
3192	-2.22	-42.88	-3.72	-43.32	-3.21	-44.53	-1.81	-4.57	-4.52	-4.43	-4.43	-4.42	-44.01	-2.13	-43.59	-2.13
3193	-2.27	-42.74	-3.78	-43.18	-3.27	-44.49	-1.86	-4.53	-4.48	-4.39	-4.39	-4.38	-43.87	-2.13	-43.28	-2.13
3194	-2.32	-42.60	-3.84	-43.04	-3.32	-44.35	-1.92	-4.53	-4.48	-4.39	-4.39	-4.38	-43.80	-2.13	-43.15	-2.13
3195	-2.38	-42.46	-3.85	-42.90	-3.37	-44.21	-1.97	-4.53	-4.48	-4.39	-4.39	-4.38	-43.75	-2.13	-43.05	-2.13
3196	-2.43	-42.32	-3.95	-42.76	-3.43	-44.07	-2.02	-4.52	-4.47	-4.39	-4.39	-4.38	-43.55	-2.13	-43.36	-2.13
3197	-2.48	-42.17	-4.00	-42.61	-3.48	-43.93	-2.07	-4.52	-4.47	-4.39	-4.39	-4.38	-43.31	-2.13	-43.22	-2.13
3198	-2.53	-42.03	-4.06	-42.47	-3.53	-43.79	-2.13	-4.51	-4.46	-4.42	-4.42	-4.41	-43.18	-2.13	-43.05	-2.13
3199	-2.59	-41.85	-4.11	-42.33	-3.65	-43.65	-2.18	-4.50	-4.45	-4.41	-4.41	-4.40	-43.54	-2.13	-42.94	-2.13
3200	-2.64	-41.75	-4.17	-42.19	-3.64	-43.50	-2.23	-4.48	-4.43	-4.39	-4.39	-4.38	-43.50	-2.13	-42.86	-2.13
3201	-2.74	-42.63	-4.18	-43.12	-3.71	-44.35	-2.31	-4.53	-4.48	-4.44	-4.44	-4.43	-43.22	-2.13	-42.66	-2.13
3202	-2.84	-42.45	-4.23	-42.99	-3.76	-44.22	-2.36	-4.53	-4.48	-4.44	-4.44	-4.43	-43.15	-2.13	-42.52	-2.13
3203	-2.84	-42.35	-4.28	-42.84	-3.81	-44.01	-2.42	-4.52	-4.47	-4.43	-4.43	-4.42	-43.07	-2.13	-42.43	-2.13
3204	-2.90	-42.23	-4.35	-42.70	-3.87	-43.94	-2.47	-4.50	-4.45	-4.40	-4.40	-4.39	-42.79	-2.13	-42.39	-2.13
3205	-1.21	-43.35	-3.14	-44.52	-2.70	-45.64	-0.51	-45.22	-4.57	-4.52	-4.52	-4.51	-42.75	-2.13	-42.35	-2.13
3206	-1.26	-43.18	-3.20	-44.35	-2.77	-45.47	-0.57	-45.05	-4.50	-4.45	-4.45	-4.44	-42.70	-2.13	-42.30	-2.13
3207	-1.32	-43.00	-3.26	-44.18	-2.83	-45.31	-0.64	-44.88	-4.48	-4.43	-4.43	-4.42	-42.65	-2.13	-42.20	-2.13
3208	-1.37	-42.82	-3.26	-44.01	-2.89	-45.14	-0.70	-44.72	-4.42	-4.37	-4.37	-4.36	-42.60	-2.13	-42.16	-2.13
3209	-1.43	-42.63	-3.38	-43.85	-2.95	-44.98	-0.76	-44.55	-4.38	-4.33	-4.33	-4.32	-42.55	-2.13	-42.11	-2.13
3210	-1.48	-42.48	-3.45	-43.68	-3.01	-44.81	-0.82	-44.38	-4.33	-4.28	-4.28	-4.27	-42.50	-2.13	-41.94	-2.13
3211	-1.54	-42.30	-3.51	-43.52	-3.07	-44.64	-0.88	-44.21	-4.27	-4.22	-4.22	-4.21	-42.45	-2.13	-41.87	-2.13
3212	-1.59	-42.12	-3.57	-43.30	-3.14	-44.47	-0.94	-44.05	-4.18	-4.13	-4.13	-4.12	-42.38	-2.13	-41.70	-2.13
3213	-0.76	-57.49	-8.19	-58.16	-8.04	-65.99	-0.20	-59.57	-1.15	-1.10	-1.10	-1.09	-63.85	-2.06	-43.54	-2.06
3214	14.88	-59.12	-6.74	-65.66	-7.45	-67.43	-0.62	-67.43	-1.10	-1.07	-1.07	-1.06	-61.47	-1.70	-43.57	-1.70
3215	2.57	-65.71	0.94	-65.32	-0.94	-67.71	3.10	-67.08	-2.87	-2.83	-2.83	-2.82	-64.52	-1.70	-43.57	-1.70
3216	-4.47	-44.005	-3.3211	-41.22	-2.61	-46.91	-24.02	-47.79	-3.07	-3.02	-3.02	-3.01	-46.75	-1.69	-46.66	-1.69
3217	-37.42	-41.11	-41.23	-19.34	-26.91	-24.02	-8.79	-36.11	-8.83	-8.78	-8.78	-8.77	-46.75	-1.69	-46.93	-2.41
3218	-37.19	-21.89	-41.21	-31.31	-28.72	-23.72	-9.30	-34.26	-9.30	-9.27	-9.27	-9.26	-46.75	-1.69	-47.97	-8.76
3219	-37.16	-42.31	-41.27	-31.31	-28.72	-23.72	-9.30	-34.26	-9.30	-9.27	-9.27	-9.26	-46.75	-1.69	-47.97	-8.76
3220	-37.02	-22.27	-41.20	-31.79	-26.21	-24.68	-9.70	-43.70	-9.70	-9.67	-9.67	-9.66	-46.75	-1.69	-47.97	-8.76
3221	-37.02	-42.27	-41.20	-31.79	-26.21	-24.68	-9.70	-43.70	-9.70	-9.67	-9.67	-9.66	-46.75	-1.69	-47.97	-8.76
3222	-42.15	-45.18	-49.54	-43.02	-62.69	-32.89	-7.21	-41.18	-4.18	-4.17	-4.17	-4.16	-46.75	-1.69	-47.97	-8.76
3223	-41.85	-46.54	-48.96	-44.05	-64.09	-31.46	-6.67	-41.19	-4.19	-4.17	-4.17	-4.16	-46.75	-1.69	-47.97	-8.76
3224	-41.85	-46.50	-48.67	-44.55	-64.84	-29.97	-5.65	-41.19	-4.19	-4.17	-4.17	-4.16	-46.75	-1.69	-47.97	-8.76

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

POSITION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION / FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG
4013	135.09	145.45	-42.91	23.40	11.60	4.32	3.57	92.33
20.64	136.14	144.88	-43.40	20.74	12.15	4.29	4.01	92.37
4014	136.14	144.88	-43.40	22.35	12.71	4.26	4.44	92.37
21.65	137.47	144.35	-43.35	23.76	13.28	4.23	4.88	92.45
4015	137.47	144.35	-43.27	23.76	13.28	4.23	4.88	92.45
24.23	139.47	143.84	-43.27	39.91	38.71	29.68	30.57	92.45
4016	139.47	143.84	-27.50	141.31	1.92	35.44	30.23	92.48
24.37	159.26	139.38	-11.77	152.20	-2.57	152.20	1.05	92.52
4017	159.26	139.38	-11.77	152.20	-2.57	152.20	1.05	92.52
4018	34.36	159.66	-29.66	139.26	-11.07	40.61	39.21	92.55
25.84	143.81	-29.65	139.24	-10.39	41.24	39.72	31.01	92.58
4019	34.36	159.66	-29.65	139.25	-9.75	41.80	39.85	92.63
30.24	144.56	-29.65	139.25	-9.75	36.74	60.28	31.45	92.63
4020	144.56	-29.65	139.25	-9.75	36.74	60.28	31.45	92.63
17.18	151.52	-33.88	142.31	3.30	34.24	15.35	57.38	119.92
4021	17.18	151.52	-33.88	142.31	3.30	34.24	15.35	92.67
17.44	152.20	-2.57	141.73	1.92	35.44	60.00	57.38	119.92
4022	17.70	152.49	-1.46	141.31	4.05	36.97	59.63	92.77
4023	17.70	152.49	-1.46	141.31	4.05	36.97	59.63	92.77
4024	17.55	152.73	-0.49	140.99	3.15	36.10	59.13	92.81
4025	0.	0.	0.	0.	0.	0.	0.	92.87
4026	-43.57	39.26	-50.65	36.13	-03.81	-37.30	1.61	92.93
4027	26.91	123.26	30.70	140.94	-38.83	25.32	19.24	92.93
4028	38.86	183.65	-32.96	130.29	-2.13	34.24	34.98	92.93
4029	22.56	164.75	0.18	129.67	4.58	26.89	55.97	92.93
4030	34.73	-159.24	0.	0.	0.	48.67	-22.63	92.93
4032	-37.32	7.54	-41.17	31.47	-64.79	-36.69	-27.88	92.93
4033	-43.01	34.11	-50.02	31.47	-64.79	-45.95	4.11	92.93
4034	18.30	120.45	-29.87	136.03	-37.86	23.88	21.36	92.93
4035	35.34	147.07	-29.74	124.44	-15.00	19.85	16.95	92.93
4036	14.02	140.48	6.47	132.98	0.74	23.59	57.42	92.93
4038	-43.95	26.96	-51.01	24.01	-63.23	-55.96	-3.53	92.93
4039	17.55	112.85	-30.12	129.34	-38.20	16.23	20.42	92.93
4040	35.04	137.27	-29.76	118.94	-14.92	14.38	37.04	92.93
4041	46.50	25.59	39.27	28.81	-1.83	19.93	58.34	92.93
4042	25.54	158.81	18.34	147.65	26.43	1.98	33.87	92.93
4044	-40.69	21.53	-50.91	18.75	-64.12	-52.74	-3.45	92.93
4045	-42.86	107.10	-30.18	123.23	-37.80	10.66	19.87	92.93
4046	37.08	131.60	-33.40	111.66	-11.40	5.43	36.33	92.93
4047	15.25	139.58	7.67	117.88	13.31	17.13	57.46	92.93
4048	0.	0.	0.	0.	0.	0.	0.	92.93
4049	40.51	0.	0.	0.	0.	0.	0.	92.93
4050	40.52	12.50	-50.99	9.36	-42.69	-67.34	1.19	92.93
4051	18.25	100.03	-29.53	116.59	-38.40	4.36	20.70	92.93
4052	35.84	123.58	-30.68	106.18	-14.99	0.37	37.28	92.93
4053	40.54	16.18	119.73	-5.30	113.83	2.42	5.05	92.93
4054	40.55	21.89	160.06	24.13	133.02	25.20	22.96	92.93
4055	40.56	-17.54	-43.32	-28.84	-28.60	-65.96	-9.04	92.93
4056	-39.50	4.32	-88.96	1.48	-61.62	-71.23	13.44	92.93
4057	-41.85	90.10	-33.89	117.64	-36.97	-4.68	13.95	92.93
4058	37.50	117.57	-30.25	98.46	-15.35	-7.57	36.15	92.93
4059	40.61	16.19	114.25	-5.03	107.78	2.22	-0.82	92.93
4060	40.62	-0.40	-50.76	-3.35	-62.19	-82.89	1.08	92.93
4061	40.63	17.42	85.20	100.94	-38.80	10.25	18.49	92.93
4062	40.64	42.45	-53.09	-8.08	-65.13	-89.91	2.03	92.93

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MISSION/ FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG
4072	31°.3	81°.05	-29°.16	105°.18	-39°.36	-14°.20	22°.78	-17°.98
4073	33°.3	105°.34	-20°.88	79°.08	-15°.10	-15°.55	41°.94	-30°.42
4074	12°.3	59°.57	4°.26	93°.51	0°.41	-15°.80	58°.22	-71°.80
4075	0°.	0°.	0°.	0°.	0°.	0°.	0°.	0°.
4076	-44°.25	-13°.27	-51°.32	-16°.24	-64°.24	-92°.80	4°.09	-25°.01
4077	17°.13	71°.80	-29°.51	87°.64	-38°.63	-22°.95	19°.63	-25°.66
4078	26°.43	100°.64	-30°.07	79°.41	-15°.64	-25°.12	36°.46	-37°.00
4079	15°.47	53°.55	8°.06	85°.33	2°.03	-20°.31	57°.82	-74°.43
4080	36°.19	-41°.59	-61°.69	-31°.23	30°.95	-30°.48	28°.86	-61°.26
4082	-41°.01	-41°.47	-64°.60	-52°.64	28°.23	-91°.86	-9°.94	-25°.27
4083	-45°.29	-18°.22	-52°.36	-21°.07	-63°.56	-106°.82	1°.21	-27°.78
4084	17°.77	67°.56	29°.72	86°.42	-45°.22	-47°.45	20°.83	-30°.35
4085	34°.87	91°.77	-18°.85	63°.85	-14°.94	-29°.78	36°.39	-31°.59
4086	17°.27	59°.22	-5°.82	-5°.82	13°.27	-22°.66	57°.54	-80°.97
4088	-4°.51	-26°.22	-51°.59	-29°.11	-65°.22	-105°.14	3°.05	-37°.62
4089	16°.81	57°.82	-29°.67	74°.24	-38°.92	-36°.80	16°.82	-38°.92
4090	39°.30	86°.83	-31°.58	63°.56	-14°.02	-41°.53	35°.43	-52°.09
4091	16°.30	80°.32	9°.07	72°.72	0°.82	-33°.74	56°.27	-91°.64
4092	19°.80	114°.76	32°.42	-44°.73	1°.86	-39°.03	27°.86	-44°.83
4094	-41°.01	-54°.28	-44°.72	-65°.43	26°.23	-105°.27	9°.55	-36°.48
4095	-44°.38	-32°.33	-29°.73	70°.28	-38°.94	-41°.87	20°.10	-44°.59
4096	17°.05	79°.02	-31°.18	57°.80	-14°.70	-47°.28	36°.00	-48°.58
4097	37°.81	66°.40	14°.89	64°.83	1°.86	-40°.43	56°.50	-93°.45
4098	0°.	0°.	0°.	0°.	0°.	0°.	0°.	0°.
4100	-44°.68	-38°.84	-51°.76	-41°.70	-63°.54	-123°.94	3°.23	0°.
4101	16°.78	44°.82	-29°.58	61°.93	-39°.21	-49°.50	19°.82	-55°.32
4102	36°.82	70°.26	-30°.37	53°.02	-16°.32	-51°.92	35°.50	-50°.69
4103	20°.80	77°.76	-3°.08	65°.14	1°.95	-47°.90	56°.41	-57°.92
4104	26°.11	67°.07	-67°.07	87°.73	14°.62	-52°.40	42°.27	-89°.81
4105	-41°.99	-67°.39	-45°.65	-78°.39	-29°.64	-50°.40	19°.22	-52°.75
4107	-44°.45	-44°.13	-51°.53	-46°.80	-64°.79	-19°.95	-12°.75	-56°.27
4108	19°.64	41°.85	-28°.68	54°.72	-44°.49	-68°.14	21°.56	-59°.04
4109	38°.28	67°.44	-30°.63	43°.26	-14°.65	-59°.82	37°.41	-66°.88
4110	26°.72	65°.10	4°.33	42°.44	14°.43	-50°.69	57°.92	-57°.36
4112	-4°.32	-52°.63	-51°.43	-55°.51	-61°.92	-138°.77	2°.01	-63°.25
4113	17°.75	21°.90	16°.66	87°.73	14°.62	-52°.40	-23°.90	-84°.71
4114	39°.39	53°.50	-23°.05	46°.04	-45°.68	-61°.18	-61°.39	-70°.55
4115	25°.10	60°.35	-31°.39	35°.52	-31°.82	-13°.83	-69°.27	-74°.77
4116	29°.20	84.54	23°.26	73°.36	14°.95	-64°.28	32°.24	-98°.83
4118	-40°.08	-85°.21	-43°.61	-93°.32	-26°.19	-131°.01	-7°.82	-49°.05
4119	-44°.49	-58°.76	-51°.59	-61°.74	-64°.55	-139°.63	1°.26	-68°.27
4120	19°.57	28°.29	-28°.60	41°.26	-44°.61	-81°.65	21°.40	-72°.32
4121	37°.58	50°.59	-31°.39	30°.20	-34°.74	-73°.01	37°.26	-78°.75
4122	24°.62	52°.75	2°.35	30°.77	0.81	-69°.82	55°.11	-122°.38
4123	0°.	0°.	0°.	0°.	0°.	0°.	0°.	0°.
4124	-44°.81	-65°.21	-51°.93	-68°.90	-62°.51	-150°.81	2°.86	-42°.89
4125	25°.14	29°.20	-29°.66	32°.37	-38°.44	-76°.65	19°.16	-76°.45
4126	37°.51	43°.72	-32°.15	26°.90	-16°.14	-79°.25	35°.38	-76°.66
4127	16°.60	54°.17	-74°.72	31°.29	-1.28	-51°.82	-129°.12	55°.43
4128	24°.07	83°.88	25°.01	56°.98	31°.67	-82°.44	34°.49	-110°.80
4129	-27°.79	-87°.91	-35°.35	-96°.45	-34°.55	-128°.41	-26°.82	-87°.28
4130	-38°.14	-70°.07	-45°.42	-70°.92	-65°.74	-159°.99	3°.80	-83°.78

MISSION

NUMBER

DATE

TIME

EXPOSURE

NUMBER

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NUMBER

EXPOSURE

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EXPOSURE

NUMBER

EXPOSURE

NUMBER

EXPOSURE

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MISSION/ FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG
4132 15-51:	12.16	-30.66	18.73	-97.65	9.42	-27.33	-23.00	-35.99
4133 36.58	28.46	-30.38	16.01	-16.60	32.27	-84.08	35.88	-36.67
4134 18.62	41.30	6.68	23.33	-1.21	-77.85	60.07	-127.93	-33.89
4136 -44.56	-78.69	-51.0	-81.63	-63.73	-1.62.55	1.53	-88.78	-12.05
4137 17.93	7.82	-29.50	26.23	-44.96	21.59	-91.07	2.05	-40.53
4138 38.29	22.38	-32.04	11.81	-15.24	-92.06	36.68	-95.13	-40.99
4139 23.90	34.26	2.08	11.89	2.12	-86.75	57.20	-140.49	-25.36
4140 -44.18	-100.74	37.72	-90.28	25.14	-81.32	40.71	-118.12	-145.88
4142 -63.97	-51.51	-86.57	-65.96	-1.67.18	3.23	-94.64	-22.92	-46.45
4143 21.79	7.62	-28.67	21.93	-46.57	-111.25	22.22	-96.13	-26.70
4144 35.15	29.73	-30.01	6.25	-10.07	37.57	-94.44	29.89	-47.10
4145 17.85	24.63	-30.73	7.23	2.03	-92.77	57.16	-155.02	-44.62
4146 0.	0.	0.	0.	0.	0.	0.	-40.04	-29.37
4147 0.	0.	0.	0.	0.	0.	0.	-41.03	-29.37
4148 -44.16	-93.33	-51.30	-96.56	-62.23	-174.62	1.69	-102.75	-44.66
4149 17.26	-6.16	-29.94	11.85	-38.37	-100.29	21.00	-103.71	-54.38
4150 37.22	18.64	-31.15	-1.39	-16.68	-106.64	35.43	-101.35	-52.26
4151 16.49	26.93	-51.74	5.69	0.61	-98.93	59.78	-158.89	-52.26
4152 20.47	49.65	36.94	-102.71	21.82	-94.82	26.18	-146.16	-52.26
4154 -45.37	-115.68	-49.35	-126.76	-43.23	-165.83	-96.65	-126.76	-50.17
4155 -1.27	-103.47	-50.42	-103.54	-63.29	-176.80	21.72	-110.94	-50.17
4156 17.17	-14.05	-29.72	1.72	-38.27	-108.19	19.90	-110.75	-51.55
4157 38.61	15.46	-32.46	-7.85	-15.15	-112.45	36.29	-113.57	-51.55
4158 23.51	14.27	1.36	-7.77	2.56	-106.16	56.15	-164.93	-51.55
4160 -44.32	-106.18	-51.15	-107.33	-61.84	170.45	3.85	-116.74	-51.55
4161 17.07	-119.14	-30.22	0.15	-38.37	-113.73	22.05	-118.07	-51.55
4162 36.42	6.54	-30.86	-14.54	-13.43	-131.64	2.64	-121.16	-51.55
4163 18.61	11.43	-61.15	-8.85	0.84	-112.77	59.74	-171.00	-51.55
4164 42.72	-126.59	38.05	-116.37	29.22	-108.00	29.26	-159.86	-51.55
4165 16.52	159.14	27.23	168.51	29.42	-142.55	5.45	-154.61	-51.55
4166 -38.76	-131.35	-42.79	-142.25	-28.43	178.41	-16.74	-47.19	-51.55
4167 -43.63	-111.34	-50.76	-114.10	-64.53	166.33	2.64	-121.16	-51.55
4168 19.48	-22.35	-29.33	-4.10	-45.35	-131.37	2.64	-121.87	-51.55
4169 35.75	2.75	-30.84	-20.51	-11.75	-117.39	37.13	-121.02	-51.55
4170 16.50	7.61	-5.70	-15.72	0.24	-120.15	59.88	-178.26	-51.55
4171 0.	0.	0.	0.	0.	0.	0.	0.	0.
4172 -43.91	-119.43	-51.03	-122.89	-63.01	151.22	3.01	-129.22	-52.54
4173 17.72	-22.04	-29.95	-16.60	-4.17	-147.15	20.32	-128.97	-52.54
4174 37.33	-7.91	-32.01	-29.18	-14.26	-132.04	37.02	-132.81	-52.54
4175 20.28	-3.47	-6.08	-23.13	2.64	-125.23	58.35	-174.73	-52.54
4176 17.24	146.49	27.71	156.43	30.77	-172.23	0.99	-141.99	-52.54
4177 0.	0.	0.	0.	0.	0.	0.	-67.04	-52.54
4178 -35.38	-140.73	-41.21	-150.57	-32.29	173.75	-24.53	-131.03	-52.54
4180 -42.17	-124.56	-49.32	-127.28	-63.97	151.58	-130.43	-120.46	-52.54
4181 23.80	-13.17	-27.52	-28.35	-44.82	-151.67	12.19	-127.98	-52.54
4182 35.22	-13.66	-31.18	-32.02	-17.44	-136.71	39.74	-141.43	-52.54
4183 18.52	-15.55	-4.76	-25.77	5.15	-127.54	58.85	165.52	-52.54
4184 -16.18	159.64	-3.98	150.98	-2.55	150.65	16.98	160.95	-52.54
4185 21.25	159.70	-4.09	150.98	-2.67	17.04	161.02	-11.65	-52.54
4186 -43.41	-132.27	-50.53	-135.19	-63.76	147.70	3.28	-142.45	-52.54
4187 16.31	-17.24	-30.50	-31.39	-37.86	-142.22	20.38	-31.50	-52.54
4188 37.53	-19.58	-32.24	-41.75	-14.42	-145.20	36.92	-146.18	-52.54

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MISSION/ FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG
4189	20.87	-16.05	-22.83	-38.26	1.85	-139.51	39.29	165.43
4190	43.43	-117.24	38.76	-137.25	28.61	142.41	32.12	125.60
4191	17.59	132.69	28.61	142.41	-0.16	126.37	30.47	176.55
4192	17.90	132.69	28.53	142.38	30.72	178.70	-0.32	128.32
4193	-35.04	-147.49	-41.24	-156.17	-28.32	150.46	-21.32	-139.56
4194	-44.77	-137.63	-51.88	-140.88	-65.35	141.16	6.84	-150.08
4195	18.86	-48.91	-29.42	-28.68	-45.12	-160.5	23.34	-150.51
4196	35.03	-25.60	-29.85	-47.64	-13.01	-145.28	42.52	-163.08
4197	14.53	-32.73	6.75	-40.45	2.00	-144.08	59.78	151.82
4198	-11.47	141.36	4.46	137.64	6.63	138.10	-8.36	166.82
4199	-11.85	141.40	4.31	137.60	6.47	138.03	-8.14	167.36
4200	-17.48	-58.14	-30.19	-40.92	-168.92	-44.01	-13.93	-155.72
4201	37.03	-24.79	-32.14	-59.98	-13.03	-156.97	37.46	-160.04
4202	14.26	120.28	25.51	128.68	30.55	160.80	6.76	118.52
4203	14.15	120.28	25.42	128.55	29.32	163.66	-6.95	118.62
5005	52.00	29.29	4.32	-75.07	29.0*	0*	6.67	-75.07
5006	52.12	39.05	3.25	-75.03	0*	0*	6.67	-75.03
5007	52.24	38.82	3.25	-75.00	-2.43	-123.16	67.19	89.02
5008	52.36	38.59	2.19	-74.96	-2.14	-111.79	67.39	88.31
5009	52.47	38.36	2.27	-74.92	-1.97	-111.45	67.58	88.63
5010	52.58	38.13	1.73	-74.88	8.76	-102.04	67.77	88.57
5011	52.68	37.91	1.16	-74.84	8.44	-102.07	67.96	88.45
5012	52.78	37.68	0.55	-74.80	8.12	-102.10	68.15	88.34
5013	26.57	1.54	-25.41	-21.63	-21.61	-28.61	10.78	-24.59
5014	26.53	1.37	-25.51	-21.71	-22.97	-28.56	10.73	-24.58
5015	26.50	1.21	-25.61	-21.59	-3.02	-28.56	10.69	-24.55
5016	26.43	4.58	-25.71	-21.46	-21.46	-28.54	10.64	-24.58
5017	26.44	4.36	-25.82	-21.33	-3.33	-28.51	10.59	-24.57
5018	26.43	3.52	-25.92	-21.21	-3.18	-28.49	10.54	-24.56
5019	26.41	3.58	-26.02	-21.08	-3.37	-28.42	10.50	-24.55
5020	26.39	3.27	-26.12	-20.94	-3.29	-28.44	10.45	-24.55
5021	-27.95	-49.77	0*	0*	0*	0*	0*	-26.35
5022	28.73	-42.74	-43.97	-20.77	-43.59	-43.59	-15.32	-142.14
5023	35.62	-6.61	-40.25	-49.56	-8.69	-57.86	19.55	-52.98
5025	59.67	12.06	7.88	-94.39	0*	0*	0*	-16.75
5026	35.82	-56.82	-82.95	-6.37	-21.42	-56.26	-10.46	-61.05
5027	0*	0*	0*	0*	0*	0*	0*	-10.62
5028	38.74	-17.64	-35.05	-65.51	8.48	-70.72	19.41	-66.84
5029	61.93	1.70	1.08	-109.30	0*	0*	69.59	65.19
5030	38.80	-68.74	-44.44	-31.61	-20.44	-71.34	-5.35	-48.25
5031	44.92	-111.91	7.73	-119.57	0.69	-145.61	54.15	-150.67
5032	42.23	-114.58	4.04	-122.17	-2.24	-148.15	52.39	-152.55
5033	-24.19	58.61	-24.42	62.88	-27.90	62.75	-27.44	58.16
5034	-23.81	58.67	-24.03	62.90	-27.48	62.75	-27.02	58.24
5035	-23.43	53.72	-23.65	62.92	-27.07	62.76	-26.61	56.31
5036	-22.05	58.78	-23.28	62.94	-26.66	62.77	-26.21	56.38
5037	-17.32	55.48	-17.71	58.98	-20.50	58.76	-20.25	57.06
5038	5.00	39.25	0.37	52.93	-2.43	52.76	-5.09	56.37
5039	58.44	-132.02	20.94	-139.62	0*	0*	-1.21	-133.58
5040	-29.14	49.70	-29.40	54.93	-33.59	54.86	-32.68	49.22
5041	5.00	35.08	-0.99	49.86	-3.58	49.62	35.04	-31.39
5042	4.74	32.22	0.19	46.65	-2.32	46.50	-5.57	-0.60
5043	-29.28	-136.14	-60.13	-121.25	-64.05	136.62	-13.33	-149.22

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	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG	
5044	0.09	41.55	-0.23	44.32	-2.49	44.13	-2.34	41.33	-1.04
5045	0.37	41.57	0.95	44.34	-2.21	44.16	-2.06	41.36	-0.76
5046	0.45	41.59	0.33	44.37	-1.93	44.18	-1.78	41.38	-0.49
5047	0.92	41.61	0.60	44.39	-1.66	44.20	-1.51	41.41	-0.22
5048	-0.07	41.65	0.19	45.26	-3.08	45.05	-2.22	41.48	-1.05
5049	-0.42	41.68	0.49	45.29	-2.78	45.06	-1.93	41.51	-0.67
5050	0.53	41.71	0.79	45.33	-2.47	45.08	-1.62	41.53	-0.46
5051	0.82	41.73	1.09	45.36	-2.17	45.09	-1.32	41.56	-0.16
5052	8.56	23.65	4.05	38.14	1.62	38.03	1.76	26.42	-0.26
5053	68.29	-145.57	33.43	153.90	16.77	162.54	74.29	156.39	-58.15
5054	-23.38	27.40	-25.43	32.81	-41.93	24.99	0.	-26.73	25.89
5055	3.08	32.79	3.20	35.56	1.02	35.39	1.10	32.58	-2.42
5056	3.85	32.81	3.47	35.59	1.30	35.41	1.37	32.61	-2.37
5057	4.12	32.82	3.75	35.61	1.57	35.43	1.64	32.63	-2.05
5058	4.46	32.85	4.02	35.64	1.84	35.46	1.92	32.66	-1.92
5059	3.35	33.02	3.54	36.41	0.48	36.18	1.24	32.86	-2.38
5060	3.64	33.04	3.83	36.44	0.77	36.20	1.53	32.88	-2.67
5061	3.54	33.08	4.13	36.48	1.07	36.22	1.83	32.91	-2.96
5062	4.24	33.11	4.43	36.52	1.37	36.24	2.13	32.93	-3.26
5063	0.81	21.45	21.19	35.41	-2.33	35.13	-1.30	31.30	-0.16
5064	6.63	12.21	1.85	27.53	-0.55	27.40	-3.50	16.97	1.10
5065	-31.31	-152.47	-62.49	-137.09	-70.41	145.46	-22.50	171.52	-41.10
5066	23.09	27.55	22.80	31.20	20.00	30.88	20.26	27.37	21.77
5067	23.46	27.57	23.16	31.26	20.34	30.93	20.60	27.39	22.12
5068	23.82	27.59	23.52	31.31	20.68	30.95	20.97	27.41	22.47
5069	24.18	27.59	23.88	31.37	20.22	31.00	21.29	22.82	22.87
5070	18.92	24.51	18.42	27.97	15.99	27.74	15.99	24.39	17.53
5071	1.66	22.53	1.40	25.19	-0.79	25.03	-0.65	22.35	0.59
5072	1.93	22.55	1.67	25.22	-0.52	25.05	-0.38	22.37	0.86
5073	2.20	22.57	1.94	25.24	-0.26	25.07	-0.11	22.40	1.12
5074	2.47	22.59	2.20	25.26	0.01	25.09	0.16	22.42	1.39
5075	1.54	22.56	1.84	26.13	-1.38	25.92	-0.53	22.43	0.59
5076	1.84	22.56	2.4	26.16	-1.08	25.93	-0.24	22.43	0.89
5077	2.13	22.61	2.44	26.20	-0.78	25.94	0.06	22.45	1.10
5078	2.44	22.63	2.74	26.24	-0.37	25.97	0.37	22.47	1.49
5079	55.52	-166.42	21.31	-173.04	8.51	157.01	61.47	134.97	47.71
5080	3.51	16.77	3.52	19.65	0.93	19.45	1.60	16.60	1.41
5081	2.76	16.79	3.60	19.68	1.20	19.49	1.69	16.62	2.02
5082	4.06	16.81	4.07	19.71	1.48	19.49	1.96	16.65	3.09
5083	4.33	16.84	4.35	19.74	1.76	19.51	2.24	16.67	3.36
5084	-13.49	12.42	-13.77	-15.57	-16.38	15.41	-16.15	12.13	-14.72
5085	58.63	-175.34	21.55	178.29	9.23	146.97	61.40	125.89	47.76
5086	40.35	10.45	39.84	16.93	35.76	16.12	36.21	10.25	2.54
5087	40.88	10.46	40.35	17.08	36.23	15.22	36.59	10.47	2.82
5088	41.41	10.45	40.88	17.23	36.71	15.33	37.17	10.28	3.00
5089	41.56	10.45	41.41	17.39	37.19	16.43	37.66	10.30	3.36
5090	21.98	7.36	21.57	21.85	11.03	19.25	10.76	18.92	8.43
5091	22.32	7.37	22.20	11.07	19.58	10.80	19.63	21.23	8.44
5092	22.67	7.37	22.55	11.11	19.91	10.94	19.74	21.45	8.45
5093	23.03	7.37	22.55	12.30	6.21	7.13	6.07	8.32	8.45
5094	8.94	4.14	8.32	7.30	6.21	7.13	6.07	5.98	5.16
5095	9.23	4.15	8.61	7.32	6.50	7.44	6.36	5.97	5.18
5096	9.53	4.16	8.90	7.35	6.79	7.18	6.64	5.99	5.20

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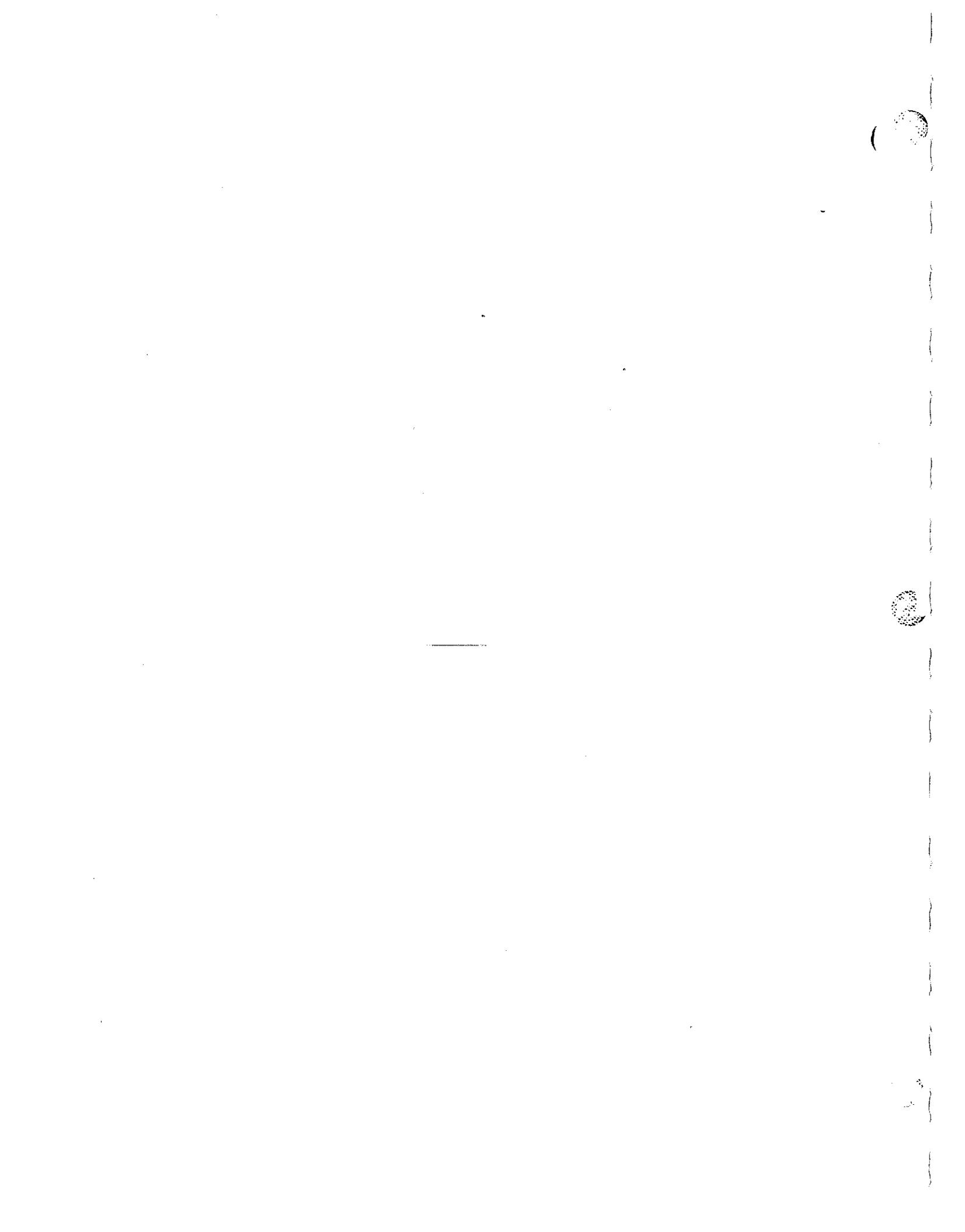
MISSION/ FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
	A LAT	A LONG	B LAT	B LONG	C LAT	C LONG	D LAT	D LONG
5097	9.83	4.17	9.37	7.37	5.41	-6.21	5.26	-6.10
5098	-3.70	2.68	-3.19	5.08	7.08	6.93	4.01	2.47
5099	-3.42	2.70	-3.71	5.43	-5.93	5.28	-5.82	2.51
5100	-3.15	2.76	-3.14	3.45	-5.65	5.30	-5.54	2.54
5101	-2.88	2.78	-3.14	5.47	-5.37	5.31	-5.26	2.57
5102	4.60	-17.01	52.68	4.10	47.93	8.31	36.06	-6.23
5103	55.39	17c.18	21.64	170.00	10.70	142.33	61.29	120.95
5104	25.18	0.56	24.78	4.78	21.96	4.48	22.13	0.73
5105	26.83	0.57	26.41	5.03	23.50	4.68	23.68	0.80
5106	28.39	0.59	27.95	5.27	24.95	4.88	25.14	0.86
5107	30.01	0.58	29.54	5.53	26.43	5.07	26.63	0.90
5108	1.29	-2.48	0.90	0.23	-1.20	-0.07	-1.17	-2.70
5109	1.57	-2.46	1.18	1.52	-1.64	-0.89	-0.89	-2.67
5110	1.84	-2.45	1.45	0.28	-0.28	0.12	-0.64	0.42
5111	2.12	-2.43	1.72	0.30	-0.37	0.14	-0.34	-2.64
5112	0.99	-2.34	1.14	0.76	1.69	0.60	-1.07	-2.49
5113	1.27	-2.31	1.43	0.79	-1.40	0.61	-0.78	-2.47
5114	1.55	-2.29	1.72	0.82	-1.11	0.62	-0.49	-2.44
5115	1.85	-2.27	2.01	0.85	-0.81	0.64	-0.20	-2.42
5116	-1.36	-5.61	-12.99	-2.17	-16.08	-2.17	-15.62	-5.81
5117	-12.74	-5.58	-12.66	-2.15	-15.74	-2.24	-15.19	-5.77
5118	-12.42	-5.55	-12.34	-2.14	-15.40	-2.23	-14.85	-5.74
5119	-12.11	-5.52	-12.03	-2.12	-15.06	-2.23	-14.52	-5.71
5120	13.07	-5.33	13.62	-2.17	10.90	-2.07	11.99	-5.52
5121	13.97	-5.31	13.93	-2.12	11.19	-2.04	11.69	-5.50
5122	14.27	-5.29	14.23	-2.08	11.48	-2.00	11.46	-5.45
5123	14.58	-5.26	14.54	-2.03	11.78	-2.07	11.98	-5.47
5124	56.08	167.80	22.14	162.01	12.76	136.12	61.57	111.33
5125	-40.04	16.16	-40.68	-16.75	-40.54	-45.12	-46.59	-45.02
5126	-39.51	-15.01	-40.12	-7.53	-45.20	-7.68	-44.50	-16.36
5127	-38.95	-14.66	-39.55	-7.53	-44.35	-7.70	-3.87	-16.13
5128	-14.78	-14.72	-38.97	-7.52	-43.89	-7.72	-3.23	-15.91
5129	51.70	-7.31	50.96	3.34	45.39	1.19	46.50	-7.49
5130	52.01	-7.29	51.63	3.73	45.98	1.42	47.12	-7.75
5131	53.12	-7.27	52.32	4.15	46.58	1.66	47.75	-7.72
5132	53.86	-7.26	53.01	4.59	47.20	1.91	48.38	-5.51
5133	12.94	-12.31	12.61	-9.32	10.29	-9.50	10.29	-12.51
5134	14.14	-12.27	13.70	-9.52	-9.39	-11.43	-11.71	-11.43
5135	15.39	-12.22	14.94	-9.07	11.27	-12.66	-12.35	-12.35
5136	16.71	-12.21	13.83	-8.66	-9.27	-12.45	-12.35	-12.35
5137	6.05	-16.30	7.57	-8.94	13.91	-9.16	-12.39	-12.39
5138	-6.19	-18.14	-6.40	-7.57	-14.53	-13.46	-12.82	-12.82
5139	-5.90	-18.11	-15.31	-6.11	-15.79	-15.49	-15.56	-15.56
5140	-5.61	-18.68	-15.82	-5.82	-15.47	-15.44	-15.52	-15.52
5141	-5.32	-18.66	-15.53	-5.53	-15.27	-15.44	-15.51	-15.51
5142	13.95	-17.72	13.83	-6.67	-18.26	-6.41	-17.36	-17.36
5143	15.15	-17.64	15.04	-6.67	-18.22	-6.49	-17.04	-17.04
5144	16.39	-17.57	16.28	-6.40	-18.39	-6.40	-17.57	-17.57
5145	17.67	-17.46	17.55	-6.11	-18.79	-6.38	-17.51	-17.51
5146	7.61	-19.41	7.67	-6.53	-15.27	-7.62	-16.82	-16.82
5147	7.91	-19.49	7.97	-6.67	-15.44	-7.67	-16.91	-16.91
5148	8.20	-19.47	8.25	-6.65	-15.64	-7.62	-17.51	-17.51
5149	8.47	-19.46	8.53	-6.56	-15.64	-7.63	-17.54	-17.54

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MISSION/ FRAME NO.	CORNER COORDINATES - MEDIUM RESOLUTION				CORNER COORDINATES - HIGH RESOLUTION			
	A LAT	A LCNG	B LAT	B LCNG	C LAT	C LONG	D LAT	D LONG
5150 10-46	-21.69	10.30	-18.83	7.85	-19.05	8.19	-21.01	9.30
5151 10-75	-21.67	10.60	-18.80	8.14	-19.03	8.48	-21.06	9.39
5152 11-05	-21.65	10-85	-18.76	8.43	-19.00	8.77	-21.04	9.59
5153 11-25	-21.63	11-19	-18.73	8.72	-18.95	9.34	-20.97	9.74
5154 11-64	-21.61	11-48	-18.69	9.01	-18.95	9.63	-20.92	9.88
5155 11-94	-21.59	11-78	-18.66	9.29	-18.92	9.92	-20.86	10.04
5156 12-23	-21.57	12-07	-18.62	9.58	-18.89	9.92	-20.81	10.55
5157 12-52	-21-55	12-36	-18.59	9.87	-18.86	10.21	-20.75	10.72
5158 54-33	150-37	21-13	145-32	11-65	120-50	59-64	103-46	46-42
5159 33-87	-24-52	33-52	33-86	-19-40	29-86	-19-98	30-28	-21-04
5160 34-28	-24-52	33-50	33-86	-19-40	30-27	-19-90	30-57	-23-18
5161 34-76	-24-52	34-32	34-82	-19-20	36-70	-19-83	31-10	-23-15
5162 35-24	-24-51	34-20	34-82	-19-09	31-15	-19-75	31-35	-24-12
5163 54-52	145-21	21-22	139-83	11-92	114-63	60-06	97-66	46-78
5164 13-55	-32-40	13-70	-29-35	11-21	-29-58	11-44	-32-58	12-31
5165 14-26	-32-38	14-00	-29-31	11-51	-29-55	11-74	-32-56	12-67
5166 14-56	-32-26	14-31	-29-27	11-80	-29-52	12-04	-32-54	12-97
5167 14-87	-32-35	14-61	-29-24	12-10	-29-49	12-33	-32-62	13-23
5168 -28-15	-40-15	-28-94	-34-92	-32-63	-32-01	-32-00	-31-07	-30-92
5169 -2-56	-37-76	-2-63	-34-84	-5-92	-35-02	-5-15	-37-99	-38-79
5170 -2-27	-37-73	-2-63	-34-84	-5-92	-35-00	-4-85	-37-99	-38-79
5171 -1-97	-37-70	-2-34	-34-82	-4-62	-34-98	-4-55	-37-92	-38-79
5172 -1-68	-37-68	-2-05	-34-79	-4-33	-34-96	-4-26	-37-89	-38-79
5173 -2-64	-37-75	-2-51	-34-50	-5-48	-34-96	-4-86	-37-92	-38-79
5174 -2-33	-37-72	-2-21	-34-47	-5-17	-34-65	-4-55	-37-89	-38-79
5175 -2-03	-37-69	-1-69	-34-44	-4-86	-34-64	-4-25	-37-86	-38-79
5176 -1-74	-37-67	-1-61	-34-42	-4-62	-34-62	-3-94	-37-86	-38-79
5177 -17-47	-41-86	-17-62	-38-82	-4-62	-38-26	-20-37	-42-20	-42-20
5178 -16-07	-41-59	-16-21	-38-81	-19-29	-38-01	-17-54	-40-85	-40-85
5179 -14-71	-41-54	-14-84	-38-04	-17-46	-38-19	-17-46	-40-71	-40-71
5180 -13-36	-41-40	-13-49	-37-97	-16-42	-38-17	-16-05	-40-58	-40-58
5181 58-19	123-15	26-05	127-94	10-64	94-57	59-37	50-11	11-11
5182 37-22	-44-36	36-62	-38-52	32-92	-39-14	33-18	-44-55	35-31
5183 37-73	-44-37	37-11	-38-41	33-37	-39-05	33-63	-44-54	35-78
5184 38-23	-44-38	37-59	-38-30	33-81	-38-97	34-65	-44-52	36-25
5185 38-73	-44-29	38-08	-38-18	34-26	-38-68	34-53	-44-51	36-72
5186 27-52	-45-62	27-15	-41-50	24-04	-41-90	24-37	-45-93	26-04
5187 27-91	-45-68	27-54	-41-43	-24-40	-41-85	24-73	-45-91	26-41
5188 28-30	-44-37	28-32	-41-35	24-77	-41-79	25-10	-45-89	26-79
5189 28-70	-45-55	28-72	-41-28	25-14	-45-87	25-48	-45-87	27-02
5190 29-11	-45-64	28-72	-41-20	25-51	-41-68	25-85	-45-85	27-56
5191 29-51	-45-62	29-12	-41-13	25-88	-41-62	26-23	-45-82	27-95
5192 29-52	-45-61	29-52	-41-05	26-26	-41-56	26-80	-45-80	28-34
5193 30-33	-45-60	29-93	-40-97	26-54	-41-50	26-99	-45-78	28-73
5194 23-64	-49-26	23-32	-41-35	24-77	-41-79	25-10	-45-89	26-77
5195 24-00	-49-25	23-68	-45-42	20-74	-45-80	21-08	-45-80	22-48
5196 24-36	-49-23	24-04	-45-36	21-08	-45-75	21-42	-45-75	22-83
5197 24-73	-49-21	24-40	-49-21	21-52	-45-62	21-79	-45-62	23-33
5198 25-10	-49-20	24-77	-45-53	21-76	-45-65	21-11	-49-41	23-68
5199 25-47	-49-18	25-88	-45-51	22-11	-45-60	22-46	-49-38	24-04
5200 25-64	-49-16	25-50	-45-50	22-46	-45-55	22-81	-45-47	24-00
5201 26-22	-49-15	25-88	-45-50	22-16	-49-34	24-76	-45-42	24-36
5202 26-65	-51-69	26-17	-47-43	23-21	-47-01	24-40	-50-43	24-56



APPENDIX C

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ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	PHASE ANGLE	
	ALT	LAT	LONG	LAT	LONG	SUN AZIMUTH					
1065	218.30	1.63	64.62	84.00	84.00	89.15	68.41	6.33	62.88	5.51	
1066	217.42	1.52	65.12	1.76	84.57	89.11	67.84	5.45	62.88	4.94	
1067	216.79	1.41	65.44	1.63	85.15	89.07	67.27	4.87	62.88	4.37	
1068	216.08	1.30	66.15	1.51	85.72	89.03	66.69	4.30	62.88	3.80	
1069	215.42	1.19	66.65	1.38	86.29	88.99	66.12	3.74	62.88	3.23	
1070	214.79	1.08	67.17	1.26	86.87	88.94	65.55	3.18	62.88	2.66	
1071	214.20	0.97	67.67	1.14	87.44	88.89	64.98	2.63	62.88	2.09	
1072	213.65	0.86	68.18	1.01	88.84	64.41	2.10	62.88	1.52		
1073	213.13	0.75	68.65	0.89	88.58	63.84	1.62	62.88	0.95		
1074	212.65	0.64	69.20	0.77	89.15	88.72	63.27	1.23	62.88	0.38	
1075	212.21	0.53	69.70	0.65	89.72	88.66	62.70	1.05	62.88	-0.18	
1076	211.80	0.42	70.21	0.52	90.29	88.60	62.14	1.16	62.88	-0.75	
1077	211.43	0.31	70.72	0.40	90.85	88.53	61.57	1.51	62.88	-1.31	
1078	211.10	0.20	91.22	0.28	91.42	88.45	61.00	1.97	62.88	-1.86	
1079	210.80	0.09	91.73	0.15	91.99	88.38	60.44	2.49	62.88	-2.44	
1080	210.55	-0.01	92.23	0.03	92.56	88.30	59.88	3.02	62.88	-3.01	
1081	209.87	-0.37	96.67	-1.04	97.54	87.45	54.93	8.01	62.88	-7.95	
1082	209.49	-1.09	97.15	-1.17	98.12	87.33	54.34	8.61	62.88	-8.84	
1083	210.08	-1.30	97.72	-1.30	98.72	87.21	53.75	9.21	62.88	-9.13	
1084	210.26	-1.31	98.25	-1.42	99.31	87.08	53.17	9.81	62.88	-9.72	
1085	210.81	2.49	76.42	1.23	76.16	88.83	72.38	11.08	70.41	1.63	
1086	227.93	2.51	72.13	1.62	71.77	88.94	73.26	8.17	70.26	2.84	
1087	228.11	2.50	70.12	1.84	69.77	87.45	73.41	6.44	70.41	2.91	
1088	1304.34	-5.39	152.52	-10.23	153.79	275.84	67.89	2.80	69.70	-1.82	
1089	230.81	2.52	61.68	1.58	61.41	88.90	74.36	8.86	70.41	3.61	
1090	129.72	-5.41	-16.16	-10.27	-16.27	276.20	66.40	4.05	69.70	-3.32	
1091	129.77	-5.42	-16.23	-10.28	-16.34	276.20	66.40	4.05	69.70	-3.32	
1092	242.57	3.44	49.23	2.54	47.95	80.43	12.55	70.18	10.17	10.17	
1093	237.71	3.09	50.54	2.15	4.9-94	88.92	78.46	11.25	70.26	2.84	
1094	233.95	1.80	56.59	0.77	56.83	88.69	71.59	9.10	70.18	1.16	
1095	221.68	1.33	56.28	0.47	58.29	88.36	70.13	9.28	70.18	-0.33	
1096	1339.41	-9.03	112.51	-8.72	-162.60	274.81	70.00	0.74	70.27	-0.27	
1097	1343.73	-6.59	-165.03	-8.65	-162.11	274.69	70.48	0.82	70.27	0.21	
1098	1360.94	-8.33	-159.62	-7.98	-157.76	273.75	74.74	4.81	70.27	4.46	
1099	1365.10	-10.59	-159.54	-7.90	-157.27	273.45	75.23	5.31	70.27	4.94	
1099	1451.41	-7.89	-153.17	-6.49	-149.05	272.27	83.32	13.57	70.27	13.03	
1100	1453.87	-7.96	-155.01	-6.4	-148.74	272.23	83.64	13.89	70.27	13.35	
1101	256.43	4.29	41.17	3.30	39.15	88.76	85.53	16.95	70.22	15.27	
1102	265.27	4.82	34.44	4.36	31.86	88.57	89.10	19.07	70.27	18.83	
1103	1344.67	-1.25	46.15	1.18	45.12	88.82	71.26	7.50	70.27	0.02	
1104	1046	2.65	31.60	3.19	31.20	88.91	82.60	15.55	70.22	12.27	
1105	1452.82	3.57	32.15	3.12	31.62	88.92	82.19	15.27	70.22	11.85	
1106	71.65	2.35	36.14	2.04	33.90	88.96	76.37	9.81	70.28	5.56	
1107	1049	2.19	34.51	1.88	34.70	88.94	75.57	9.46	70.28	5.14	
1108	1050	60.10	-0.19	42.14	-0.61	42.34	88.05	64.43	13.52	70.29	-6.47
1109	1051	60.05	-0.28	42.54	-0.70	42.75	87.99	64.92	13.78	70.25	-6.00
1110	59.45	-0.72	40.85	-0.69	40.83	87.95	62.39	1.07	61.64	3.74	
1111	1052	59.47	-0.75	41.00	-0.73	40.98	87.92	62.24	0.95	61.64	0.59
1112	1053	59.51	-0.78	41.14	-0.76	41.13	87.90	62.09	0.83	61.64	0.44
1113	1054	59.54	-0.81	41.29	-0.79	41.27	87.88	61.94	0.73	61.64	0.30
1114	1055	59.58	-0.84	41.43	-0.82	41.42	87.86	61.75	0.64	61.64	0.15
1115	1056	59.62	-0.87	41.57	-0.85	41.57	87.84	61.65	0.59	61.64	0.00
1116	1057	59.66	-0.90	41.72	-0.89	41.72	87.81	61.50	0.57	61.64	-0.15
1117	1058	59.71	-0.93	41.86	-0.92	41.87	87.79	61.35	0.59	61.64	-0.30

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN AZIMUTH			INCIDENT ANGLE			EMISSION ANGLE			PHASE ANGLE			ALPHA													
	ALT	LAT	LONG	LAT	LONG	SUN AZIMUTH	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00
1060	59.76	-0.97	42.01	-0.95	42.02	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1061	59.81	-1.00	42.01	-0.98	42.01	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1062	59.87	-1.03	42.03	-1.01	42.02	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1063	59.92	-1.06	42.05	-1.05	42.04	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1064	59.99	-1.09	42.05	-1.08	42.03	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1065	60.05	-1.12	42.07	-1.11	42.06	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1066	60.12	-1.15	42.09	-1.14	42.08	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1067	60.19	-1.19	42.03	-1.18	42.02	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1068	58.69	0.24	34.49	0.25	34.44	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1069	58.63	0.21	34.63	0.22	34.59	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1070	58.57	0.16	34.77	0.19	34.74	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1071	58.51	0.15	34.92	0.16	34.89	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1072	58.45	0.12	35.06	0.13	35.03	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1073	58.40	0.08	35.20	0.10	35.16	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1074	58.35	0.05	35.34	0.06	35.30	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1075	58.30	0.02	35.49	0.03	35.45	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1076	58.26	-0.01	35.53	-0.01	35.52	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1077	58.22	-0.04	35.57	-0.07	35.57	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1078	58.18	-0.07	35.52	-0.07	35.52	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1079	58.14	-0.10	35.46	-0.10	35.46	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1080	58.11	-0.13	35.40	-0.13	35.39	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1081	58.08	-0.16	35.35	-0.16	35.35	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1082	58.05	-0.19	35.30	-0.19	35.30	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1083	58.03	-0.22	35.22	-0.22	35.22	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1084	58.05	-0.45	25.11	-0.53	25.06	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1085	56.90	0.49	25.21	0.51	25.21	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1086	56.69	0.46	25.35	0.47	25.35	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1087	56.58	0.43	25.20	0.44	25.20	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1088	56.49	0.40	25.06	0.41	25.06	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1089	56.36	0.36	23.52	0.36	23.52	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.00	1.64
1090	55.96	0.21	26.77	0.21	26.77	87.77	61.20	0.65	87.74	61.05	0.74	87.72	60.90	0.84	87.70	60.75	0.95	87.67	60.60	1.09	87.65	60.45	1.23	87.62	60.30	1.37	87.60	60.15	1.51	87.58	60.	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	PHASE ANGLE
	ALT	LAT	LONG	LAT	LONG	SUN				
1115	1381.13	-8.27	148.22	-3.92	145.25	272.60	71.04	12.23	59.75	0.83
1116	1456.20	-7.55	148.62	-1.16	153.40	271.76	79.43	17.26	55.75	9.90
1117	1581.24	-6.07	152.64	-5.2	25.66	28.66	90.03	115.01	-90.00	-90.00
1118	51.80	0.27	-2.48	0.29	-2.55	88.49	70.31	2.61	67.80	2.50
1119	51.70	0.24	-2.24	0.25	-2.41	88.48	70.17	2.47	67.80	2.36
1120	51.61	0.22	-2.21	0.22	-2.27	88.47	70.03	2.33	67.80	2.22
1121	51.52	0.18	-2.07	0.19	-2.13	88.46	69.99	2.18	67.80	2.08
1122	51.42	0.15	-1.94	0.16	-1.99	88.45	69.75	2.04	67.80	1.94
1123	51.34	0.12	-1.85	0.13	-1.85	88.43	69.51	1.90	67.80	1.81
1124	51.25	0.09	-1.69	0.10	-1.71	88.42	69.47	1.75	67.80	1.67
1125	51.17	0.06	-1.53	0.07	-1.57	88.41	69.33	1.61	67.80	1.53
1126	51.09	0.03	-1.40	0.04	-1.44	88.40	69.19	1.47	67.80	1.49
1127	51.02	0.00	-1.26	0.01	-1.30	88.38	69.06	1.33	67.80	1.25
1128	50.94	-0.03	-1.13	-0.02	-1.16	88.37	68.92	1.19	67.80	1.12
1129	50.87	-0.06	-0.59	-0.05	-0.02	88.36	68.78	1.05	67.80	0.98
1130	50.81	-0.08	-0.66	-0.08	-0.05	88.34	68.64	0.91	67.80	0.84
1131	50.74	-0.11	-0.73	-0.11	-0.75	88.33	68.51	0.77	67.80	0.70
1132	50.68	-0.14	-0.55	-0.13	-0.61	88.32	68.37	0.63	67.80	0.57
1133	50.62	-0.17	-0.46	-0.16	-0.47	88.30	68.24	0.50	67.80	0.43
1134	50.55	-0.21	-1.45	0.91	-15.14	88.25	79.35	11.40	70.27	9.00
1135	54.17	1.86	-15.46	1.52	-15.73	88.77	78.20	13.79	70.27	7.68
1136	1327.75	-8.11	129.35	-5.40	129.33	273.67	69.34	6.23	69.91	-0.69
1137	52.59	1.60	-18.16	1.25	-15.84	88.70	78.92	45.89	36.91	44.35
1138	48.15	5.57	-17.17	0.75	-17.29	88.63	74.53	9.12	70.22	4.15
1139	46.39	0.59	-19.0	0.27	-19.28	88.60	73.03	12.46	70.24	2.38
1140	45.58	0.38	-20.15	0.10	-20.20	88.44	72.21	11.01	70.22	1.65
1141	49.12	-2.42	-4.22	-3.39	-4.21	85.72	54.63	0.54	54.90	-0.27
1142	49.91	-3.61	-3.70	-3.68	-3.68	85.40	54.10	0.85	56.90	-0.79
1143	50.73	-3.62	-3.17	-3.61	-3.13	85.43	53.57	1.33	56.90	-1.32
1144	51.60	-3.73	-2.4	-3.72	-2.58	85.28	53.03	1.86	56.90	-1.86
1145	52.53	-2.84	-2.09	-3.84	-2.02	85.12	52.48	2.42	56.90	-2.41
1146	53.53	-2.85	-1.84	-3.95	-1.45	84.95	51.92	2.99	56.90	-2.97
1147	54.59	-4.06	-0.57	-4.07	-0.86	84.78	51.35	3.58	56.90	-3.55
1148	55.72	-4.16	-0.59	-4.19	-0.26	84.59	50.76	4.19	56.90	-4.13
1149	46.92	0.04	-24.21	0.19	-24.28	88.47	72.80	9.72	70.12	2.44
1150	54.54	1.44	-30.75	1.07	-30.47	88.68	77.23	15.10	86.22	-9.28
1151	43.93	-0.49	-23.66	-0.10	-23.65	88.33	68.68	15.30	70.27	-2.40
1152	52.10	0.70	-36.55	0.72	-37.09	88.61	75.13	4.87	70.29	4.84
1153	51.31	0.58	-36.16	0.58	-36.48	88.58	74.51	4.25	70.29	4.22
1154	51.13	-2.10	-22.66	-3.14	-22.83	88.54	73.90	3.63	70.29	3.62
1155	50.57	0.45	-35.76	0.45	-35.87	88.54	73.90	3.11	58.53	-1.17
1156	49.88	0.44	-24.02	0.32	-24.28	88.47	72.80	3.00	76.29	3.00
1157	50.69	-2.01	-23.45	-3.06	-23.23	88.50	72.29	2.21	58.53	-1.30
1158	50.83	-3.04	-22.12	-3.09	-23.10	88.52	77.90	1.74	58.53	-1.44
1159	50.98	-2.07	-22.59	-3.12	-22.96	88.54	77.77	1.82	58.53	-0.77
1160	51.13	-2.10	-22.66	-3.14	-22.83	88.51	75.64	1.91	58.53	-0.90
1161	51.28	-2.12	-22.73	-3.17	-22.69	88.51	75.51	2.01	58.53	-1.04
1162	51.44	-2.15	-22.50	-3.10	-22.56	88.52	75.44	2.11	58.53	-1.17
1163	51.60	-2.18	-22.46	-3.23	-22.42	88.50	75.31	2.32	58.53	-1.30
1164	51.76	-2.20	-22.33	-3.26	-22.28	88.50	75.97	2.44	58.53	-1.58
1165	51.93	-2.23	-22.20	-3.28	-22.15	88.52	76.84	2.55	58.53	-1.71
1166	52.10	-2.26	-22.16	-3.31	-22.01	88.53	76.70	2.67	58.53	-1.85
1167	52.27	-2.29	-21.72	-3.34	-21.87	88.56	76.56	2.79	58.53	-1.99
1168	52.45	-2.31	-21.75	-3.37	-21.73	88.52	76.43	2.92	58.53	-2.12

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	PHASE ANGLE-E	PHASE ANGLE-A
	ALT	LAT	LONG	LAT	LONG	LONG					
1169	52.63	-2.34	-21.66	-21.59	65.59	56.29	3.04	58.53	-2.26	-2.26	-2.26
1170	52.81	-2.37	-21.82	-21.43	85.45	56.15	3.17	58.53	-2.40	-2.40	-2.40
1171	52.59	-2.40	-21.38	-21.46	21.31	65.82	66.01	3.30	58.53	-2.54	-2.54
1172	52.18	-2.43	-21.82	-21.49	21.6	85.79	55.87	3.63	58.53	-2.68	-2.68
1173	54.74	-2.51	-22.51	-20.53	22.19	84.76	53.70	25.11	70.30	-18.59	-18.59
1174	72.12	2.41	-57.12	1.96	-57.73	88.43	85.28	18.43	70.39	14.80	14.80
1175	50.14	-2.51	-35.62	-3.41	-35.31	86.21	59.53	20.38	70.41	-12.32	-12.32
1176	50.78	-2.01	-37.05	-3.03	-37.04	86.44	59.49	0.82	59.87	-0.39	-0.39
1177	50.91	-2.04	-36.51	-3.06	-36.90	86.41	59.35	0.92	59.87	-0.52	-0.52
1178	51.05	-2.07	-36.76	-3.09	-36.76	56.38	59.22	1.33	59.87	-0.66	-0.66
1179	51.18	-2.10	-36.65	-3.12	-36.02	86.35	59.05	1.15	59.87	-0.80	-0.80
1180	51.32	-2.12	-36.51	-3.15	-36.48	86.32	58.94	1.27	59.87	-0.93	-0.93
1181	51.47	-2.15	-36.38	-3.18	-36.34	86.29	58.80	1.40	59.87	-1.07	-1.07
1182	51.62	-2.18	-36.24	-3.20	-36.20	86.26	58.67	1.53	59.87	-1.21	-1.21
1183	51.77	-2.21	-36.14	-3.23	-36.06	86.23	58.53	1.65	59.87	-1.35	-1.35
1184	48.76	-1.81	-44.76	-1.89	-44.40	87.44	65.95	1.01	64.20	0.84	0.84
1185	48.78	-1.83	-44.25	-1.92	-44.27	87.42	64.92	0.86	64.20	0.72	0.72
1186	48.81	-1.86	-44.13	-1.95	-44.14	87.40	64.79	0.76	64.20	0.59	0.59
1187	48.84	-1.89	-44.00	-1.97	-44.01	87.38	64.66	0.64	64.20	0.46	0.46
1188	48.88	-2.01	-44.57	-2.00	-43.98	87.36	64.53	0.53	64.20	0.33	0.33
1189	48.91	-2.04	-43.75	-2.03	-43.75	87.34	64.41	0.43	64.20	0.20	0.20
1190	48.95	-2.06	-42.62	-2.05	-43.63	87.32	64.28	0.35	64.20	0.08	0.08
1191	48.99	-2.09	-43.50	-2.08	-43.50	87.30	64.15	0.32	64.20	-0.05	-0.05
1192	49.03	-2.12	-43.37	-2.11	-43.37	87.28	64.02	0.33	64.20	-0.18	-0.18
1193	49.08	-2.14	-42.24	-2.14	-43.24	87.25	63.89	0.42	64.20	-0.31	-0.31
1194	49.13	-2.17	-43.12	-2.16	-43.12	87.23	63.76	0.49	64.20	-0.46	-0.46
1195	49.18	-2.19	-42.55	-2.19	-42.98	87.21	63.63	0.60	64.20	-0.57	-0.57
1196	49.23	-2.22	-42.62	-2.22	-42.85	87.19	63.51	0.71	64.20	-0.70	-0.70
1197	49.28	-2.25	-42.74	-2.24	-42.74	87.17	63.38	0.83	64.20	-0.83	-0.83
1198	49.34	-2.27	-42.61	-2.27	-42.58	87.15	63.25	0.94	64.20	-0.95	-0.95
1199	49.40	-2.30	-42.46	-2.30	-42.45	87.12	63.12	1.09	64.20	-1.08	-1.08
1200	49.56	-2.31	-44.25	-2.30	-44.40	87.14	63.32	0.52	62.96	0.35	0.35
1201	49.64	-2.34	-44.26	-2.33	-44.27	87.11	63.19	0.41	62.96	0.22	0.22
1202	49.70	-2.36	-44.13	-2.36	-44.14	87.09	63.06	0.33	62.96	0.09	0.09
1203	49.77	-2.39	-44.00	-2.38	-44.00	87.07	62.93	0.28	62.96	-0.04	-0.04
1204	49.84	-2.42	-43.67	-2.41	-43.67	87.04	62.79	0.28	62.96	-0.17	-0.17
1205	49.91	-2.44	-43.25	-2.44	-43.74	87.02	62.66	0.37	62.96	-0.31	-0.31
1206	49.98	-2.47	-43.62	-2.46	-43.60	87.00	62.53	0.47	62.96	-0.43	-0.43
1207	50.05	-2.50	-43.45	-2.49	-43.47	86.97	62.40	0.58	62.96	-0.56	-0.56
1208	50.13	-2.52	-43.36	-2.52	-43.34	86.95	62.27	0.70	62.96	-0.70	-0.70
1209	50.21	-2.55	-43.33	-2.55	-43.31	86.93	62.14	0.83	62.96	-0.83	-0.83
1210	50.30	-2.58	-43.10	-2.57	-43.07	86.90	62.00	0.96	62.96	-0.96	-0.96
1211	50.38	-2.60	-42.57	-2.60	-42.94	86.88	61.87	1.09	62.96	-1.09	-1.09
1212	50.47	-2.63	-42.84	-2.63	-42.81	86.85	61.74	1.22	62.96	-1.22	-1.22
1213	50.55	-2.66	-42.71	-2.66	-42.67	86.83	61.61	1.36	62.96	-1.36	-1.36
1214	50.65	-2.68	-42.58	-2.68	-42.54	86.80	61.48	1.49	62.96	-1.49	-1.49
1215	50.75	-2.71	-42.45	-2.71	-42.40	86.78	61.34	1.63	62.96	-1.62	-1.62
2005	52.25	4.24	36.12	4.25	35.99	74.47	1.26	73.25	1.22	1.22	1.22
2006	52.15	4.21	36.15	4.22	36.12	91.48	1.13	73.34	1.09	1.09	1.09
2007	52.05	4.19	36.28	4.20	36.25	91.48	1.00	73.20	0.95	0.95	0.95
2008	51.95	4.16	36.41	4.17	36.38	91.48	0.97	73.07	0.86	0.86	0.86
2009	51.86	4.14	36.53	4.14	36.51	91.49	0.94	73.04	0.73	0.73	0.73
2010	51.77	4.11	36.66	4.12	36.65	91.49	0.60	73.25	0.69	0.69	0.69

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ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN			EMISSION			PHASE		
	ALT	LAT	LONG	LAT	LONG	AZIMUTH	ANGLE	ANGLE	ANGLE	EMISSION	ANGLE	ANGLE	PHASE	ANGLE	PHASE
2011	51-69	36-75	4-09	36-78	4-06	91-49	73-66	0-47	73-25	0-43					
2012	51-60	4-05	36-52	4-06	36-91	91-49	73-55	0-34	73-25	0-29					
2013	51-52	4-03	37-04	4-04	37-04	91-50	73-61	0-22	73-25	0-16					
2014	51-44	4-01	37-17	4-01	37-17	91-50	73-28	0-13	73-25	0-03					
2015	51-36	3-58	37-30	3-59	37-30	91-50	73-15	0-15	73-25	-0-10					
2016	51-28	3-56	37-42	3-56	37-43	91-50	73-02	0-24	73-25	-0-23					
2017	51-21	3-53	37-55	3-53	37-56	91-51	72-89	0-37	73-25	-0-36					
2018	51-14	3-51	37-57	3-51	37-59	91-51	72-76	0-49	73-25	-0-49					
2019	51-07	3-48	37-60	3-48	37-82	91-51	72-63	0-62	73-25	-0-62					
2020	51-00	3-06	37-53	3-06	37-95	91-51	72-50	0-75	73-25	-0-75					
2021	50-10	3-27	40-54	3-25	40-95	91-52	69-49	3-88	73-22	-3-85					
2022	50-09	2-24	40-56	3-22	41-08	91-51	69-36	4-01	73-33	-3-98					
2023	50-08	2-21	41-05	3-19	41-21	91-51	69-22	4-15	73-33	-4-11					
2024	50-07	2-19	41-22	3-17	41-34	91-50	69-09	4-28	73-33	-4-24					
2025	50-04	2-03	36-10	3-57	36-34	91-44	72-34	12-26	81-06	-8-92					
2026	50-07	3-80	36-24	3-54	36-48	91-44	72-19	12-37	81-06	-9-07					
2027	50-51	2-77	36-37	3-62	36-62	91-44	72-06	12-49	81-06	-9-21					
2028	50-45	2-75	36-51	3-49	36-76	91-44	71-91	12-61	81-06	-9-35					
2029	49-45	2-34	36-55	3-60	36-31	91-57	70-60	12-40	62-22	8-07					
2030	49-47	2-22	36-56	3-67	36-43	91-57	70-48	12-31	62-26	7-95					
2031	49-45	2-29	36-78	3-55	36-55	91-57	70-36	12-21	62-26	7-82					
2032	49-43	2-27	36-50	3-52	36-68	91-57	70-23	12-10	62-22	7-70					
2033	144-65	-9-53	174-29	-10-29	174-09	273-51	69-82	0-91	70-19	-0-37					
2034	1452-54	-5-54	172-25	4-71	173-55	268-51	70-84	30-97	70-17	-2-65					
2035	48-57	2-75	33-61	2-74	33-62	91-43	67-98	0-45	68-40	-0-42					
2036	48-60	2-72	33-72	2-72	33-74	91-42	67-96	0-57	68-40	-0-54					
2037	48-62	2-70	33-55	2-69	33-87	91-42	67-73	0-70	68-40	-0-67					
2038	48-65	2-47	33-37	2-66	33-99	91-42	67-61	0-82	68-40	-0-79					
2039	48-68	2-65	34-05	2-64	34-11	91-41	67-48	0-95	58-40	-0-92					
2040	48-72	2-45	34-51	2-61	34-23	91-41	67-36	1-07	68-40	-1-04					
2041	48-75	2-40	34-32	2-59	34-36	91-41	67-24	1-20	68-40	-1-16					
2042	48-79	2-57	34-44	2-56	34-48	91-40	67-12	1-32	68-40	-1-28					
2043	49-65	2-47	33-37	2-66	33-99	91-42	67-22	1-46	75-81	1-41					
2044	49-74	4-50	21-06	4-51	21-03	91-35	77-09	1-32	75-81	1-28					
2045	49-61	4-48	21-15	4-49	21-16	91-35	76-96	1-19	75-81	1-14					
2046	49-48	4-42	21-32	4-42	21-29	-	71-36	76-82	1-05	75-81	1-01				
2047	49-34	4-43	21-45	4-43	21-42	91-35	76-69	0-92	75-81	0-88					
2048	49-22	4-40	21-58	4-41	21-56	91-37	76-56	0-78	75-81	0-75					
2049	49-09	4-37	21-10	4-38	21-69	91-43	76-43	0-57	74-78	0-46					
2050	48-97	4-35	21-63	4-35	21-82	91-37	76-29	0-52	75-81	0-48					
2051	47-96	4-18	20-75	4-19	20-72	91-39	75-62	0-94	74-78	0-84					
2052	47-86	4-01	20-57	4-11	20-85	91-41	74-73	0-81	74-78	0-71					
2053	47-76	4-13	20-59	4-14	20-98	91-40	75-37	0-69	74-78	0-68					
2054	47-66	4-11	21-02	4-12	21-11	91-40	75-24	0-57	74-78	0-46					
2055	47-56	4-08	21-24	4-09	21-23	91-40	75-11	0-46	74-78	0-33					
2056	47-47	4-06	21-37	4-07	21-36	91-41	74-98	0-36	74-78	0-20					
2057	47-37	4-03	21-19	4-04	21-49	91-41	74-86	0-29	74-78	0-07					
2058	47-28	4-01	21-62	4-01	21-62	91-41	74-73	0-26	74-78	-0-06					
2059	47-16	4-03	15-26	4-10	15-22	91-23	74-77	0-18	74-78	1-43					
2060	50-99	4-06	15-02	4-07	15-36	91-24	74-77	0-16	74-78	1-29					
2061	50-81	4-03	15-53	4-05	15-49	91-25	74-70	0-12	74-78	1-16					
2062	50-64	4-01	15-06	4-02	15-63	91-26	78-84	0-09	77-94	1-03					
2063	50-42	4-78	15-78	4-79	15-76	91-26	78-84	0-95	77-94	0-89					

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ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

MISSION/ FRAME NO.

PRINCIPAL PT.

SUN

INCIDENT

EMISSION

PHASE

ANGLE

ANGLE

ALPHA

MISSION/ FRAME NO.	ALT	LAT	LONG	LAT	LONG	AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	PHASE
2064	50.71	4.76	16.51	4.77	15.69	91.27	76.70	0.82	77.94
2065	50.75	4.73	16.03	4.74	16.03	91.27	76.57	0.69	77.94
2066	49.95	4.71	16.17	4.72	16.16	91.28	76.44	0.56	77.94
2067	45.32	2.66	24.28	2.75	24.38	91.42	68.41	3.50	65.37
2068	45.55	2.64	24.47	2.72	24.50	91.42	68.28	3.51	65.37
2069	45.57	2.61	24.59	2.70	24.62	91.42	68.16	3.53	65.37
2070	45.50	2.59	24.71	2.67	24.75	91.41	68.04	3.55	65.37
2071	45.63	2.56	24.83	2.65	24.87	91.41	67.91	3.58	65.37
2072	45.67	2.54	24.93	2.62	24.99	91.41	67.79	3.61	65.37
2073	45.70	2.51	25.07	2.60	25.11	91.40	67.67	3.65	65.37
2074	45.74	2.49	25.19	2.57	25.24	91.40	67.54	3.68	65.37
2075	14.66-05	-9.74	168.42	-21.10	158.01	277.43	70.49	24.19	70.20
2076	49.16	1.20	23.71	1.19	23.74	91.00	61.96	0.89	61.50
2077	49.31	1.17	23.84	1.17	23.87	90.99	61.83	1.03	62.82
2078	49.46	1.15	23.86	1.14	24.00	90.98	61.70	1.16	62.82
2079	49.62	1.12	24.05	1.11	24.13	90.97	61.56	1.29	62.82
2080	49.78	1.09	24.22	1.08	24.26	90.96	61.43	1.43	62.82
2081	49.94	1.07	24.38	1.03	24.39	90.94	61.30	1.57	62.82
2082	50.11	1.04	24.48	1.03	24.53	90.93	61.16	1.70	62.82
2083	50.28	1.01	24.61	1.02	24.66	90.92	61.02	1.84	62.82
2084	51.18	-0.82	23.88	0.82	23.61	90.84	60.31	1.10	61.13
2085	51.37	0.80	23.71	0.79	23.75	90.83	60.17	1.24	61.26
2086	51.56	0.77	23.85	0.76	23.89	90.81	60.03	1.38	61.39
2087	51.76	0.74	23.98	0.73	24.02	90.80	59.90	1.52	61.41
2088	51.96	0.71	24.11	0.70	24.16	90.79	59.76	1.67	61.41
2089	52.16	0.68	24.25	0.68	24.30	90.77	59.62	1.80	61.41
2090	52.37	0.65	24.39	0.65	24.44	90.76	59.48	1.95	61.41
2091	52.58	0.62	24.52	0.62	24.58	90.74	59.33	2.09	61.41
2092	44.03	3.54	4.50	4.28	4.58	91.32	75.91	1.87	78.85
2093	44.19	4.15	-0.21	0.21	-1.10	90.39	78.00	-2.03	78.35
2094	49.23	0.60	12.77	0.58	12.81	90.72	60.54	1.46	61.41
2095	40.84	2.42	2.42	2.42	2.42	91.28	69.44	0.73	70.15
2096	40.79	2.51	-2.08	2.51	-2.08	91.28	70.20	0.29	70.45
2097	40.80	2.49	-1.58	2.49	-1.57	91.27	70.08	0.40	70.45
2098	40.82	2.47	-1.87	2.46	-1.86	91.27	69.97	0.51	70.45
2099	40.83	2.45	-1.76	2.44	-1.75	91.27	69.86	0.62	70.45
2100	40.85	2.42	-1.65	2.42	-1.63	91.27	69.75	0.77	70.45
2101	40.87	2.41	-1.54	2.39	-1.52	91.26	69.64	0.93	70.45
2102	40.89	2.38	-1.43	2.37	-1.41	91.26	69.52	0.95	70.45
2103	40.92	2.35	-1.32	2.35	-1.29	91.26	69.41	1.08	70.45
2104	41.14	2.16	-2.28	2.16	-2.27	91.23	68.61	0.65	69.26
2105	41.06	2.13	-2.17	2.13	-2.15	91.22	68.50	0.77	69.26
2106	41.23	2.11	-2.04	2.11	-2.04	91.22	68.36	0.77	69.26
2107	41.27	2.09	-1.55	2.08	-1.52	91.21	68.27	0.88	69.26
2108	41.31	2.05	-1.64	2.06	-1.61	91.21	68.16	1.00	69.26
2109	41.36	2.04	-1.73	2.04	-1.70	91.20	68.04	1.12	69.26
2110	41.41	2.02	-1.62	2.01	-1.58	91.20	67.93	1.23	69.26
2111	41.45	1.99	-1.50	1.99	-1.47	91.19	67.81	1.46	69.26
2112	41.49	2.27	-1.68	2.26	-1.68	91.28	74.53	0.19	74.61
2113	46.70	0.70	-1.22	0.69	-1.25	90.78	62.28	1.22	63.64
2114	46.86	0.68	-1.16	0.66	-1.13	90.76	62.15	1.35	63.64
2115	47.03	0.65	-1.04	0.64	-1.00	90.75	62.03	1.48	63.64
2116	47.15	0.62	-0.51	0.61	-0.87	90.74	61.90	1.61	63.44

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	PHASE ANGLE	ALPHA
	ALT	LAT	LONG	LAT	LONG	SUN AZIMUTH					
2117	47.36	0.60	-0.75	0.58	-0.74	90.73	61.77	1.74	63.44	-1.68	
2118	47.53	0.57	-0.65	0.56	-0.61	90.71	61.64	1.88	63.44	-1.61	
2119	47.71	0.54	-0.54	0.53	-0.48	90.70	61.51	2.01	63.44	-1.94	
2120	47.88	0.52	-0.43	0.50	-0.35	90.69	61.38	2.14	63.44	-2.07	
2121	49.16	0.33	-1.44	0.41	-1.41	90.60	60.67	1.28	61.59	-1.22	
2122	49.36	0.30	-1.21	0.29	-1.27	90.59	60.53	1.41	61.89	-1.36	
2123	49.56	0.27	-1.18	0.26	-1.14	90.57	60.40	1.55	61.89	-1.49	
2124	49.77	0.24	-1.05	0.23	-1.00	90.56	60.26	1.69	61.89	-1.63	
2125	49.98	0.22	-0.92	0.20	-0.87	90.54	60.12	1.83	61.89	-1.77	
2126	50.19	0.19	-0.78	0.17	-0.73	90.53	59.99	1.97	61.89	-1.90	
2127	50.41	0.16	-0.65	0.16	-0.59	90.51	59.85	2.11	61.89	-2.04	
2128	50.63	0.13	-0.52	0.12	-0.46	90.49	59.71	2.25	61.89	-2.18	
2129	51.92	-0.03	-1.67	-0.04	-1.63	90.41	59.12	1.42	60.50	-1.38	
2130	52.16	-0.06	-1.53	-0.07	-1.49	90.39	58.98	1.56	60.50	-1.52	
2131	52.41	-0.09	-1.35	-0.10	-1.35	90.37	58.84	1.71	60.50	-1.65	
2132	52.65	-0.12	-1.25	-0.13	-1.20	90.35	58.69	1.86	60.50	-1.81	
2133	52.92	-0.15	-1.11	-0.16	-1.06	90.33	58.55	2.01	60.50	-1.95	
2134	53.19	-0.18	-0.97	-0.20	-0.91	90.32	58.40	2.16	60.50	-2.10	
2135	53.45	-0.21	-0.83	-0.23	-0.76	90.30	58.25	2.31	60.50	-2.25	
2136	53.72	-0.24	-0.68	-0.26	-0.61	90.28	58.10	2.46	60.50	-2.40	
2137	51.10	4.89	-27.18	4.90	-27.21	90.26	58.06	1.35	81.74	1.32	
2138	44.32	1.25	-13.29	1.25	-13.27	90.29	65.51	1.15	66.65	-1.15	
2139	46.44	1.22	-13.16	1.22	-13.14	90.28	65.39	1.27	66.65	-1.27	
2140	44.55	1.19	-13.06	1.20	-13.02	90.27	65.26	1.39	66.65	-1.39	
2141	44.66	1.17	-12.94	1.17	-12.90	90.26	65.14	1.52	66.65	-1.52	
2142	44.77	1.14	-12.82	1.14	-12.77	90.25	65.01	1.64	66.65	-1.64	
2143	44.89	1.12	-12.65	1.12	-12.65	90.25	64.89	1.76	66.65	-1.76	
2144	45.00	1.09	-12.57	1.09	-12.53	90.24	64.76	1.89	66.65	-1.89	
2145	45.12	1.07	-12.45	1.06	-12.40	90.23	64.64	2.01	66.65	-2.01	
2146	45.23	1.04	-12.35	1.04	-12.30	90.22	64.52	2.13	66.65	-2.13	
2147	45.34	1.01	-12.22	1.01	-12.17	90.21	64.40	2.24	66.65	-2.24	
2148	44.89	2.72	-27.23	3.72	-27.25	91.20	77.92	0.83	77.09	0.83	
2149	44.79	2.69	-27.11	3.69	-27.13	91.20	77.80	0.70	77.09	0.70	
2150	44.70	2.67	-26.59	3.67	-27.00	91.21	77.67	0.58	77.09	0.58	
2151	44.60	2.65	-26.87	3.64	-26.88	91.21	77.55	0.45	77.09	0.46	
2152	44.51	2.62	-26.75	3.62	-26.76	91.21	77.43	0.34	77.09	0.34	
2153	44.41	2.60	-25.64	3.60	-26.64	91.21	77.30	0.22	77.09	0.21	
2154	43.92	2.37	-27.46	3.38	-27.44	91.23	76.26	0.12	77.09	0.09	
2155	43.85	2.21	-26.64	3.20	-26.64	91.24	75.54	0.13	75.66	0.59	
2156	43.78	2.33	-27.23	3.34	-27.24	91.23	76.14	0.25	75.66	0.47	
2157	43.72	2.30	-27.12	3.30	-27.12	91.23	75.90	0.24	75.66	0.36	
2158	43.65	2.28	-27.00	3.28	-27.00	91.23	75.78	0.12	75.66	0.12	
2159	43.59	2.25	-26.88	3.25	-26.88	91.23	75.66	0.	75.66	-0.01	
2160	43.52	2.23	-26.76	3.23	-26.76	91.24	75.54	0.13	75.66	0.13	
2161	43.46	2.21	-26.64	3.20	-26.64	91.24	75.41	0.25	75.66	0.25	
2162	45.91	0.98	-20.01	5.48	-20.00	92.96	65.35	73.90	80.91	-53.75	
2163	50.91	0.19	-20.13	0.17	-20.10	90.55	61.76	1.37	63.06	-1.30	
2164	51.11	0.16	-20.00	0.14	-19.96	90.54	61.62	1.51	63.05	-1.44	
2165	51.32	0.13	-15.86	0.11	-19.82	90.52	61.48	1.65	63.05	-1.58	
2166	51.63	0.10	-19.72	0.08	-19.68	90.50	61.34	1.80	63.05	-1.72	
2167	51.75	0.07	-15.55	0.05	-19.53	90.49	61.19	1.94	63.05	-1.87	
2168	51.97	0.04	-19.45	0.02	-19.39	90.47	61.05	2.09	63.05	-2.01	
2169	52.19	0.01	-19.31	-0.01	-19.25	90.46	60.91	2.23	63.05	-2.15	

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	ALT	LAT	LONG	LAT	LONG	INCIDENT ANGLE	SUN AZIMUTH	EMISSION ANGLE	PHASE ANGLE	ALT	LAT	LONG	SUN AZIMUTH	EMISSION ANGLE	PHASE ANGLE
2170	52.42	-0.02	-19.17	-0.04	-19.10	90.44	60.76	2.38	63.06	-2.30					
2171	54.18	-0.22	-20.16	-0.24	-20.10	90.33	60.90	2.01	61.95	-1.95					
2172	54.44	-0.25	-20.02	-0.27	-19.96	90.31	59.85	2.16	61.95	-2.10					
2173	54.70	-0.28	-19.87	-0.30	-19.80	90.30	59.70	2.31	61.95	-2.25					
2174	54.95	-0.31	-19.73	-0.33	-19.65	90.28	59.55	2.47	61.95	-2.40					
2175	55.23	-0.34	-19.58	-0.36	-19.50	90.26	59.40	2.63	61.95	-2.56					
2176	55.51	-0.37	-19.43	-0.39	-19.35	90.24	59.24	2.78	61.95	-2.71					
2177	55.75	-0.41	-19.28	-0.43	-19.19	90.22	59.09	2.94	61.95	-2.87					
2178	56.07	-0.44	-19.13	-0.46	-19.04	90.20	58.93	3.10	61.95	-3.02					
2179	45.20	2.42	-34.45	2.42	-34.44	91.19	72.64	0.60	73.22	-0.58					
2180	45.15	2.40	-34.34	2.39	-34.32	91.18	72.52	0.72	73.22	-0.70					
2181	45.15	2.37	-34.22	2.37	-34.20	91.18	72.40	0.85	73.22	-0.82					
2182	45.15	2.35	-34.10	2.34	-34.08	91.18	72.26	0.97	73.22	-0.94					
2183	45.20	2.32	-33.56	2.32	-33.55	91.18	72.15	1.09	73.22	-1.07					
2184	45.20	2.30	-33.56	2.29	-33.53	91.17	72.03	1.22	73.22	-1.19					
2185	45.21	2.27	-33.74	2.27	-33.71	91.17	71.91	1.34	73.22	-1.31					
2186	45.22	2.25	-33.63	2.24	-33.59	91.17	71.79	1.47	73.22	-1.43					
2187	45.70	2.00	-34.75	1.99	-34.76	91.17	70.79	1.06	71.84	-1.05					
2188	45.73	1.97	-34.27	1.97	-34.24	91.13	70.67	1.19	71.84	-1.17					
2189	45.77	1.95	-34.15	1.94	-34.12	91.13	70.55	1.31	71.84	-1.29					
2190	45.80	1.92	-34.03	1.92	-33.99	91.12	70.42	1.44	71.84	-1.41					
2191	45.84	1.90	-33.51	1.89	-33.57	91.12	70.30	1.56	71.84	-1.54					
2192	45.88	1.87	-33.79	1.87	-33.75	91.11	70.18	1.69	71.84	-1.66					
2193	45.92	1.85	-33.67	1.84	-33.62	91.11	70.05	1.81	71.84	-1.78					
2194	45.96	1.82	-33.55	1.81	-33.50	91.10	69.93	1.94	71.84	-1.91					
2195	47.73	2.43	-42.74	2.83	-42.71	91.16	76.65	1.05	76.70	-1.04					
1519.00	46.77	1.00	-6.06	-8.84	100.56	272.76	76.16	0.28	70.35	-0.23					
2197	47.90	1.90	-42.18	1.89	-42.17	91.08	71.57	0.61	72.14	-0.57					
2198	47.92	1.87	-42.06	1.86	-42.04	91.08	71.44	0.74	72.14	-0.70					
2199	47.95	1.85	-41.54	1.84	-41.52	91.07	71.31	0.86	72.14	-0.83					
2200	47.98	1.82	-41.81	1.81	-41.79	91.07	71.18	0.99	72.14	-0.95					
2201	48.02	1.79	-41.65	1.79	-41.65	91.07	71.05	1.12	72.14	-1.04					
2202	48.05	1.77	-41.57	1.76	-41.55	91.06	70.93	1.25	72.14	-1.21					
2203	48.09	1.74	-41.44	1.73	-41.41	91.06	70.80	1.38	72.14	-1.34					
2204	48.13	1.72	-41.32	1.71	-41.28	91.05	70.67	1.51	72.14	-1.46					
2205	48.95	1.48	-42.15	1.48	-42.12	91.01	69.75	1.11	70.86	-1.11					
2206	48.91	1.45	-42.02	1.45	-41.99	91.00	69.62	1.25	70.86	-1.24					
2207	48.97	1.43	-41.55	1.42	-41.86	90.99	69.49	1.38	70.86	-1.37					
2208	49.04	1.40	-41.77	1.39	-41.73	91.07	77.76	1.51	70.86	-1.50					
2209	49.10	1.37	-41.65	1.37	-41.60	90.98	69.23	1.64	70.86	-1.53					
2210	49.17	1.35	-41.52	1.34	-41.47	90.97	76.73	1.78	70.86	-1.46					
2211	49.25	1.32	-41.25	1.31	-41.34	90.97	68.96	1.91	70.86	-1.69					
2212	49.32	1.29	-41.27	1.29	-41.21	90.96	68.83	2.04	70.86	-2.03					
2213	50.86	2.30	-63.25	7.90	-52.77	92.03	78.82	2.26	95.97	-38.01					
2214	49.59	2.87	-53.42	8.86	-53.61	91.07	77.76	2.58	78.13	-0.38					
2215	52.68	3.49	-58.73	7.00	-57.98	91.64	80.47	6.66	95.57	-27.13					
22005	59.9C	3.09	34.27	3.10	34.21	92.28	76.73	1.73	75.03	1.69					
22007	59.55	2.98	34.26	3.04	34.37	92.27	76.57	1.56	75.03	1.54					
22008	59.39	2.92	34.20	2.93	34.51	92.27	76.42	1.41	75.02	1.39					
22009	59.23	2.87	34.14	2.88	34.65	92.26	76.27	1.25	75.03	1.24					
22010	59.07	2.82	34.06	2.82	34.98	92.25	76.13	1.10	75.03	1.10					
22011	58.91	2.76	35.12	2.77	35.10	92.25	75.98	0.95	75.03	0.95					
								Q-80	75.03	0.80					

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN			INCIDENT ANGLE			EMISSION ANGLE			PHASE ANGLE	ALPHA
	ALT	LAT	LONG	LAT	LONG	AZIMUTH	LONG	AZIMUTH	LONG	INCIDENT ANGLE	EMISSION ANGLE	INCIDENT ANGLE	EMISSION ANGLE	INCIDENT ANGLE	EMISSION ANGLE		
3012	56.76	2.71	35.27	2.71	35.25	92.24	75.68	0.65	75.02	0.65	75.02	0.65	75.02	0.65	75.02	0.65	
3013	56.62	2.66	35.40	2.66	35.39	92.24	75.54	0.50	75.03	0.50	75.03	0.50	75.03	0.50	75.03	0.50	
3014	56.47	2.60	35.55	2.60	35.53	92.23	75.39	0.35	75.03	0.35	75.03	0.35	75.03	0.35	75.03	0.35	
2015	58.33	2.55	35.68	2.55	35.68	92.23	75.24	0.21	75.02	0.21	75.02	0.21	75.02	0.21	75.02	0.21	
3016	58.19	2.50	35.82	2.50	35.82	92.22	75.09	0.06	75.03	0.06	75.03	0.06	75.03	0.06	75.03	0.06	
3017	58.06	2.45	35.96	2.44	35.96	92.21	74.95	-0.08	75.03	-0.08	75.03	-0.08	75.03	-0.08	75.03	-0.08	
3018	57.92	2.39	36.10	2.38	36.11	92.20	74.81	-0.23	75.02	-0.23	75.02	-0.23	75.02	-0.23	75.02	-0.23	
3019	57.79	2.34	36.24	2.33	36.25	92.20	74.66	-0.38	75.02	-0.38	75.02	-0.38	75.02	-0.38	75.02	-0.38	
3020	57.67	2.29	36.38	2.27	36.39	92.20	74.51	-0.52	75.03	-0.52	75.03	-0.52	75.03	-0.52	75.03	-0.52	
3021	57.56	-1.68	46.74	-1.84	47.12	90.77	63.65	0.65	75.03	0.65	75.03	0.65	75.03	0.65	75.03	0.65	
3022	57.46	-1.73	46.68	-1.89	47.26	90.74	63.52	1.26	75.26	1.26	75.26	1.26	75.26	1.26	75.26	1.26	
3023	58.07	-1.79	47.79	-1.94	47.40	90.71	63.37	1.88	75.26	1.88	75.26	1.88	75.26	1.88	75.26	1.88	
3024	58.17	-1.84	47.15	-2.00	47.54	90.67	63.23	2.50	75.26	2.50	75.26	2.50	75.26	2.50	75.26	2.50	
3025	56.05	-0.69	42.03	-0.80	41.99	91.29	67.05	3.12	65.95	3.12	65.95	3.12	65.95	3.12	65.95	3.12	
3026	56.09	-0.74	42.16	-0.85	42.12	91.27	66.91	3.78	65.99	3.78	65.99	3.78	65.99	3.78	65.99	3.78	
3027	56.14	-0.79	42.25	-0.90	42.26	91.24	66.77	4.42	65.99	4.42	65.99	4.42	65.99	4.42	65.99	4.42	
3028	56.18	-0.84	42.42	-0.95	42.39	91.22	66.63	5.07	65.99	5.07	65.99	5.07	65.99	5.07	65.99	5.07	
3029	56.23	-0.88	42.54	-1.00	42.52	91.20	66.50	5.62	65.99	5.62	65.99	5.62	65.99	5.62	65.99	5.62	
3030	56.28	-0.94	42.68	-1.06	42.66	91.18	66.37	6.17	65.99	6.17	65.99	6.17	65.99	6.17	65.99	6.17	
3031	56.33	-0.99	42.81	-1.11	42.80	91.15	66.23	6.72	65.99	6.72	65.99	6.72	65.99	6.72	65.99	6.72	
3032	56.39	-1.04	42.94	-1.16	42.93	91.13	66.09	7.27	65.99	7.27	65.99	7.27	65.99	7.27	65.99	7.27	
3033	56.57	-1.56	42.28	-0.94	42.54	91.21	64.73	7.82	73.39	7.82	73.39	7.82	73.39	7.82	73.39	7.82	
3034	56.75	-1.62	42.42	-0.99	42.68	91.19	64.58	8.37	73.39	8.37	73.39	8.37	73.39	8.37	73.39	8.37	
3035	56.94	-1.67	42.45	-1.05	42.48	91.16	64.45	8.92	73.39	8.92	73.39	8.92	73.39	8.92	73.39	8.92	
3026	56.93	-1.72	42.68	-1.10	42.95	91.14	64.31	9.47	73.39	9.47	73.39	9.47	73.39	9.47	73.39	9.47	
3037	395.64	-15.70	103.89	-20.45	102.92	7.43	19.10	6.33	15.05	6.33	15.05	6.33	15.05	6.33	15.05	6.33	
3038	56.59	-2.20	35.79	-5.00	38.71	89.32	55.00	59.84	59.84	59.84	59.84	59.84	59.84	59.84	59.84	59.84	
3039	52.69	1.08	25.24	0.07	24.92	91.55	77.10	71.61	14.87	14.87	14.87	14.87	14.87	14.87	14.87	14.87	
3040	60.44	4.12	19.77	3.57	19.49	92.09	80.89	17.76	20.40	20.40	20.40	20.40	20.40	20.40	20.40	20.40	
3041	59.33	3.89	20.37	3.34	20.11	92.09	80.25	17.59	20.41	20.41	20.41	20.41	20.41	20.41	20.41	20.41	
3042	58.49	3.67	20.56	3.12	20.73	92.09	79.63	17.44	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	
3043	57.62	3.45	21.54	2.90	21.33	92.09	79.02	17.33	18.23	18.23	18.23	18.23	18.23	18.23	18.23	18.23	
3044	51.73	0.59	27.06	0.69	27.10	91.81	71.41	3.81	72.51	3.81	72.51	3.81	72.51	3.81	72.51	3.81	
3045	51.70	0.54	27.15	0.54	27.23	91.79	71.27	3.80	72.51	3.80	72.51	3.80	72.51	3.80	72.51	3.80	
3046	51.66	0.49	27.21	0.59	27.35	91.78	71.14	3.80	72.51	3.80	72.51	3.80	72.51	3.80	72.51	3.80	
3047	51.63	0.44	27.44	0.54	27.46	91.76	71.01	3.81	72.51	3.81	72.51	3.81	72.51	3.81	72.51	3.81	
3048	51.61	0.29	27.56	0.49	27.61	91.75	70.88	3.82	72.44	3.82	72.44	3.82	72.44	3.82	72.44	3.82	
3049	51.58	0.34	27.65	0.44	27.74	91.73	70.75	3.83	72.31	3.83	72.31	3.83	72.31	3.83	72.31	3.83	
3050	51.56	0.29	27.62	0.39	27.87	91.72	70.62	3.85	72.21	3.85	72.21	3.85	72.21	3.85	72.21	3.85	
3051	51.54	0.25	27.54	0.34	28.00	91.70	70.49	3.86	72.11	3.86	72.11	3.86	72.11	3.86	72.11	3.86	
3052	51.50	0.21	27.52	0.21	28.08	91.64	70.49	3.86	72.01	3.86	72.01	3.86	72.01	3.86	72.01	3.86	
3053	50.82	0.04	24.51	0.41	24.36	91.70	72.37	4.45	68.02	4.45	68.02	4.45	68.02	4.45	68.02	4.45	
3054	50.99	0.76	24.64	0.36	24.49	91.68	72.24	4.45	68.02	4.45	68.02	4.45	68.02	4.45	68.02	4.45	
3055	50.94	0.71	24.77	0.31	24.62	91.67	72.11	4.45	68.02	4.45	68.02	4.45	68.02	4.45	68.02	4.45	
3056	50.90	0.65	24.69	0.26	24.75	91.65	71.97	4.45	68.02	4.45	68.02	4.45	68.02	4.45	68.02	4.45	
3057	50.86	0.61	25.02	0.21	24.88	91.64	71.84	4.45	68.02	4.45	68.02	4.45	68.02	4.45	68.02	4.45	
3058	50.82	0.56	25.15	0.16	25.02	91.62	71.71	4.45	68.02	4.45	68.02	4.45	68.02	4.45	68.02	4.45	
3059	50.78	0.51	25.28	0.11	25.55	91.61	71.57	4.45	68.02	4.45	68.02	4.45	68.02	4.45	68.02	4.45	
3060	50.27	0.20	24.10	0.51	24.21	91.75	70.76	3.82	71.32	3.82	71.32	3.82	71.32	3.82	71.32	3.82	
3061	50.25	0.16	24.22	0.46	24.34	91.74	70.63	3.83	71.32	3.83	71.32	3.83	71.32	3.83	71.32	3.83	
3062	50.24	0.10	24.26	0.41	24.47	91.72	70.49	3.83	71.32	3.83	71.32	3.83	71.32	3.83	71.32	3.83	
3063	50.22	0.06	24.48	0.36	24.59	91.71	70.37	3.83	71.32	3.83	71.32	3.83	71.32	3.83	71.32	3.83	
3064	50.21	0.01	24.61	0.31	24.73	91.69	70.23	3.83	71.32	3.83	71.32	3.83	71.32	3.83	71.32	3.83	

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	ALT	LAT	LONG	LAT	LONG	AZIMUTH	ANGLE	ANGLE	ANGLE	ANGLE	ANGLE	ANGLE	ANGLE	ANGLE	ANGLE	ANGLE	ALPHA	
3065	50.20	-0.04	24.73	0.26	24.86	91.68	70.10	11.32	74.53	-4.77								
3066	50.20	-0.09	24.86	0.21	24.99	91.66	69.97	11.33	74.53	-4.90								
3067	50.19	-0.14	24.55	0.15	25.12	91.64	69.83	11.33	74.53	-5.03								
3068	49.60	0.49	21.08	0.30	20.99	91.66	72.21	7.50	69.58	2.49								
3069	49.45	0.30	21.56	0.10	21.49	91.60	71.70	7.50	69.58	1.98								
3070	49.33	0.11	22.05	-0.10	22.00	91.54	71.19	7.56	69.58	1.45								
3071	49.26	-0.08	22.54	-0.29	22.50	91.47	70.69	7.61	69.58	0.94								
3072	49.06	-1.46	24.07	-0.83	24.32	91.26	67.08	22.92	76.51	-11.03								
3073	62.79	4.59	5.60	7.59	6.60	92.40	83.35	55.19	101.30	-22.13								
3074	57.51	4.03	6.15	4.03	6.17	92.08	81.83	0.62	81.27	0.61								
3075	56.48	2.80	6.77	3.79	7.35	92.09	81.27	0.29	81.27	0.01								
3076	55.43	3.58	7.23	3.57	7.35	92.09	80.68	0.76	81.27	-0.58								
3077	54.64	3.37	7.50	3.34	7.93	92.09	80.10	1.36	81.27	-1.17								
3078	56.80	-4.74	26.53	-10.29	26.51	85.69	59.84	74.44	78.46	-59.65								
3079	48.44	-2.00	17.66	-1.81	17.65	90.83	65.68	7.56	69.41	-2.91								
3080	46.71	-1.64	12.65	-1.43	12.94	91.01	67.88	4.49	69.82	-2.00								
3081	46.92	-1.72	13.34	-1.61	13.40	90.93	67.41	4.56	69.82	-2.46								
3082	47.16	-1.69	13.60	-1.80	13.87	90.84	66.94	4.68	69.82	-2.93								
3083	47.44	-2.08	14.26	-1.98	14.35	90.75	66.45	4.85	69.82	-3.41								
3084	46.75	1.61	2.92	0.80	-0.34	91.64	80.17	71.44	16.55	-57.86								
3085	49.07	2.52	1.30	4.94	-0.30	92.34	92.58	77.86	59.74	-30.76								
3086	46.94	1.83	-1.23	1.21	-1.60	91.78	77.22	24.28	69.71	6.33								
3087	46.82	1.78	-1.20	1.16	-1.46	91.78	77.08	24.28	69.71	6.18								
3088	46.70	1.73	-1.67	1.11	-1.33	91.77	76.94	24.27	69.71	6.02								
3089	46.56	1.68	-0.54	1.06	-1.19	91.76	76.80	24.26	69.71	5.87								
3090	46.44	1.63	-0.61	1.01	-1.03	91.75	76.57	24.26	69.71	5.72								
3091	46.35	1.58	-0.69	0.96	-0.93	91.74	76.53	24.26	69.71	5.57								
3092	46.25	1.53	-0.65	0.91	-0.80	91.74	76.40	24.26	69.71	5.42								
3093	46.14	1.48	-0.43	0.86	-0.67	91.73	76.27	24.25	69.71	5.27								
3094	45.42	1.16	-1.12	0.92	-1.63	91.76	75.48	10.42	71.72	3.49								
3095	45.34	1.12	-1.41	0.87	-1.51	91.75	75.36	10.42	71.72	3.37								
3096	45.26	1.08	-1.25	0.83	-1.39	91.74	75.23	10.41	71.72	3.24								
3097	45.18	1.03	-1.17	0.78	-1.27	91.73	75.11	10.41	71.72	3.12								
3098	45.11	0.99	-1.05	0.74	-1.15	91.72	74.99	10.41	71.72	2.99								
3099	45.04	0.94	-0.94	0.69	-1.03	91.71	74.87	10.41	71.72	2.87								
3100	44.97	0.90	-0.82	0.65	-0.91	91.76	74.75	10.41	71.72	2.74								
3101	44.90	0.85	-0.71	0.60	-0.79	91.69	74.63	10.41	71.72	2.62								
3102	51.88	3.32	-9.68	4.84	-9.07	92.24	81.29	42.76	62.42	-4.29								
3103	45.89	1.41	-6.55	0.93	-6.21	91.73	75.11	10.41	71.72	2.50								
3104	45.50	1.22	-5.21	0.75	-5.71	91.70	76.03	19.47	69.73	6.05								
3105	45.16	1.03	-5.12	0.56	-5.21	91.66	75.52	19.45	69.73	5.95								
3106	44.95	0.84	-4.43	0.37	-4.71	91.62	75.01	19.45	69.73	4.40								
3107	43.90	0.24	-5.16	-0.37	-5.60	91.42	72.36	5.31	70.90	1.38								
3108	51.01	-4.38	3.25	-4.36	3.28	89.30	61.67	0.79	62.46	-0.79								
3109	51.80	-4.57	3.16	-4.58	3.80	89.15	61.15	1.34	62.46	-1.31								
3110	52.04	-4.77	4.26	-4.78	4.34	88.99	60.62	1.91	62.46	-1.84								
3111	53.53	-4.97	4.61	-4.99	4.88	88.82	60.08	2.48	62.46	-2.39								
3112	43.95	-0.87	-0.82	-1.83	-0.20	90.93	71.41	36.39	62.86	3.05								
3113	43.96	-0.92	-7.68	-1.88	-0.06	90.90	71.26	36.39	62.86	3.07								
3114	43.97	-0.57	-7.54	-1.94	-0.92	90.88	71.12	36.39	62.86	3.09								
3115	43.98	-1.03	-4.41	-1.99	-0.78	90.85	70.98	36.39	62.86	3.30								
3116	46.54	-2.94	-4.34	-3.11	-4.39	90.21	65.82	6.53	64.11	1.55								
3117	46.57	-3.12	-3.88	-3.29	-3.91	90.09	65.33	6.59	64.11	1.05								

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		ALT	LAT	LONG				
3118	47.45	-2.31	-3.45	-3.48	-3.42	64.84	6.69	64.11
3119	47.97	-2.49	-2.51	-2.92	89.86	64.34	6.83	64.11
3120	45.33	5.03	-15.52	-0.73	-1.35	77.46	59.93	5.03
3121	145.15	-12.52	127.05	-2.415	126.59	277.46	70.15	52.52
3122	48.22	1.54	-21.72	1.57	-21.91	91.71	78.15	1.58
3123	53.72	2.08	-27.55	7.67	-27.57	92.52	82.30	5.12
3124	45.72	-6.62	-20.15	-0.52	-2.010	91.33	72.77	-18.95
3125	45.71	-2.66	-15.56	-0.67	-1.9.98	91.31	72.65	0.14
3126	45.70	-6.72	-15.56	-0.72	-1.9.86	91.30	72.55	0.06
3127	45.55	-9.75	-15.75	-0.76	-1.9.74	91.28	72.41	-0.06
3128	45.68	-0.89	-15.62	-0.81	-1.9.62	91.26	72.29	-0.13
3129	45.67	-0.85	-15.61	-0.86	-1.9.50	91.25	72.17	-0.42
3130	45.67	-0.89	-15.40	-0.90	-1.9.39	91.23	72.05	-0.54
3131	45.67	-0.96	-15.28	-0.95	-1.9.27	91.22	71.93	-0.66
3132	45.70	-0.72	-15.25	-0.72	-1.7.96	91.20	71.83	-0.66
3133	46.70	-2.52	-17.02	-3.46	-17.39	90.18	58.83	3.63
3134	47.08	-2.74	-15.46	-3.69	-15.81	90.16	58.25	34.10
3135	47.52	-2.56	-15.65	-3.53	-15.22	90.05	67.67	72.55
3136	46.99	-2.18	-15.85	-3.16	-23.07	90.05	67.58	-0.42
3137	48.70	-1.76	-22.58	-2.92	-23.44	90.51	70.70	72.55
3138	48.75	-1.83	-22.02	-2.98	-23.29	90.45	70.62	72.55
3139	48.80	-1.86	-22.62	-3.05	-23.13	90.43	70.57	72.55
3140	48.85	-1.92	-22.53	-3.11	-22.97	90.43	70.52	72.55
3141	48.90	-1.58	-21.27	-3.17	-22.82	90.39	70.47	72.55
3142	48.56	-2.24	-22.22	-3.23	-22.65	90.36	70.41	72.55
3143	49.02	-2.09	-22.07	-3.29	-22.59	90.33	69.95	72.55
3144	49.05	-2.18	-21.52	-3.35	-22.35	90.30	69.59	72.55
3145	49.82	-3.46	-23.45	-4.46	-23.13	90.27	70.48	72.55
3146	49.85	-2.51	-32.52	-2.75	-23.07	90.24	70.32	72.55
3147	49.97	-2.45	-22.81	-2.80	-22.87	90.21	70.16	72.55
3148	50.04	-2.65	-22.08	-2.85	-22.74	90.19	70.01	72.55
3149	50.12	-2.65	-22.56	-2.90	-22.62	90.15	69.95	72.55
3150	50.27	-2.73	-21.46	-2.95	-22.49	90.13	69.59	72.55
3151	50.28	-2.74	-22.31	-2.46	-23.12	90.10	69.23	72.55
3152	50.37	-2.79	-22.15	-3.64	-22.36	90.07	68.72	72.55
3153	51.11	-3.01	-23.55	-2.97	-23.51	90.04	68.45	72.55
3154	51.21	-3.05	-23.42	-3.72	-23.38	90.03	68.33	72.55
3155	51.31	-3.11	-23.15	-3.31	-23.25	90.00	68.21	72.55
3156	51.42	-3.16	-22.17	-3.12	-23.12	89.97	68.08	72.55
3157	51.52	-3.13	-23.55	-3.16	-22.99	89.95	68.08	72.55
3158	51.62	-3.25	-22.52	-3.21	-22.84	89.92	67.92	72.55
3159	51.74	-3.35	-22.65	-3.26	-22.72	89.89	66.69	72.55
3160	51.86	-3.25	-22.67	-3.31	-22.62	89.86	66.43	72.55
3161	54.39	1.63	-37.51	1.56	-42.02	91.61	84.21	68.76
3162	54.75	1.73	-45.10	6.91	-38.19	92.86	78.75	72.55
3163	54.80	1.53	-43.50	1.77	-42.41	91.79	79.33	72.55
3164	54.43	1.48	-42.44	1.72	-42.36	91.76	79.18	72.55
3165	54.51	1.13	-42.36	1.65	-42.12	91.78	79.33	72.55
3166	54.37	1.27	-42.12	1.60	-41.98	91.78	78.89	72.55
3167	54.24	1.62	-42.02	1.55	-41.93	91.77	78.74	72.55
3168	54.11	0.57	-41.55	1.49	-41.65	91.76	78.66	72.55
3169	53.98	0.91	-41.75	1.44	-41.55	91.76	78.46	72.55
3170	53.85	0.65	-41.61	1.38	-41.61	91.75	78.31	72.55

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	ALT	LAT	LONG	LAT	LCNG	SUN					
3171	52+23	-2° 58'	-12° 46'	-3° 58'	-35° 30'	90+25	71+93	66+05	14+02	38+35	
3172	52+26	-1° 29'	-35° 65'	-6° 42'	-44° 37'	90+22	77+16	70+93	16+47	45+56	
3173	52+25	-3° 15'	-37° 24'	-2° 25'	-37° 27'	90+27	68+79	3+64	68+25	0+49	
3174	53+34	-3° 23'	-37° 12'	-3° 30'	-37° 13'	90+24	68+65	3+58	68+25	0+35	
3175	52+44	-2° 25'	-36° 58'	-3° 36'	-36° 99'	90+21	68+51	3+71	68+25	0+21	
3176	52+52	-3° 33'	-36° 65'	-3° 41'	-36° 85'	90+19	68+37	3+75	68+25	0+37	
3177	52+64	-3° 35'	-36° 71'	-3° 46'	-35° 72'	90+16	68+24	3+81	68+25	-0+07	
3178	53+74	-2° 43'	-36° 85'	-3° 51'	-35° 88'	90+13	68+10	3+85	68+25	-0+21	
3179	52+64	-2° 45'	-36° 45'	-3° 56'	-36° 44'	90+16	57+96	3+91	68+25	-0+35	
3180	52+95	-2° 50'	-36° 32'	-3° 62'	-35° 30'	90+07	67+62	3+98	68+25	-0+49	
3181	53+39	-1° 45'	-41° 28'	-6° 22'	-43° 50'	90+02	73+37	19+57	67+77	4+50	
3182	53+39	-1° 47'	-43° 15'	-6° 22'	-43° 35'	90+00	73+13	19+57	67+77	4+34	
3183	52+40	-1° 76'	-43° 61'	-2° 32'	-43° 21'	90+07	72+59	19+58	67+77	4+19	
3184	52+41	-1° 81'	-42° 67'	-2° 38'	-43° 07'	90+07	72+85	19+58	67+77	4+03	
3185	54+00	-1° 53'	-44° 52'	-2° 30'	-44° 57'	90+76	72+65	13+09	68+44	3+81	
3186	54+02	-1° 48'	-44° 25'	-2° 35'	-44° 53'	90+75	72+35	13+08	68+44	3+67	
3187	54+04	-1° 23'	-42° 03'	-2° 45'	-44° 39'	90+73	72+41	13+08	68+44	3+52	
3188	54+06	-1° 28'	-42° 08'	-2° 46'	-44° 25'	90+71	72+27	13+08	68+44	3+37	
3189	54+09	-1° 13'	-43° 58'	-2° 51'	-44° 11'	90+69	72+12	13+09	68+44	2+22	
3190	54+12	-1° 18'	-43° 64'	-2° 56'	-43° 97'	90+66	71+56	13+09	68+44	3+07	
3191	54+15	-1° 23'	-43° 70'	-2° 52'	-43° 83'	90+64	71+54	13+10	68+44	2+92	
3192	54+19	-1° 28'	-43° 57'	-2° 67'	-43° 69'	90+62	71+50	13+11	68+44	2+77	
3193	54+22	-1° 34'	-43° 43'	-2° 72'	-43° 55'	90+59	71+56	13+12	68+44	2+63	
3194	54+27	-1° 29'	-42° 25'	-2° 78'	-43° 41'	90+57	71+42	13+13	68+44	2+48	
3195	54+31	-1° 44'	-43° 16'	-2° 82'	-43° 26'	90+54	71+38	13+14	68+44	2+33	
3196	54+36	-1° 16'	-43° 64'	-2° 88'	-43° 97'	90+52	71+36	13+16	68+44	2+18	
3197	54+41	-1° 56'	-42° 88'	-2° 94'	-42° 96'	90+49	70+99	13+17	68+44	2+03	
3198	54+47	-1° 59'	-42° 75'	-2° 99'	-42° 94'	90+47	70+85	13+19	68+44	1+88	
3199	54+52	-1° 54'	-42° 61'	-3° 04'	-42° 50'	90+44	70+71	13+21	68+44	1+73	
3200	54+58	-1° 29'	-42° 49'	-3° 10'	-42° 56'	90+42	70+57	13+23	68+44	1+58	
3201	55+51	-1° 07'	-43° 49'	-3° 21'	-43° 47'	90+33	69+72	4+73	68+44	0+67	
3202	55+56	-1° 32'	-43° 31'	-3° 26'	-43° 34'	90+30	69+58	4+76	68+44	0+53	
3203	55+77	-1° 17'	-43° 16'	-3° 31'	-43° 30'	90+28	69+44	4+79	68+44	0+39	
3204	55+86	-1° 62'	-43° 04'	-3° 37'	-43° 05'	90+25	69+30	4+83	68+44	0+24	
3205	56+25	-1° 15'	-45° 15'	-2° 16'	-44° 79'	90+20	69+29	30+93	82+57	-1+592	
3206	56+35	-1° 21'	-45° 22'	-2° 22'	-44° 62'	90+17	69+12	30+91	82+57	-1+509	
3207	56+45	-1° 27'	-44° 67'	-2° 28'	-44° 66'	90+15	68+96	30+92	82+57	-1+526	
3208	56+56	-1° 32'	-44° 71'	-2° 34'	-44° 29'	90+12	68+79	30+93	82+57	-1+493	
3209	56+67	-1° 39'	-44° 55'	-2° 40'	-44° 32'	90+09	68+62	30+94	82+57	-1+660	
3210	56+79	-1° 45'	-44° 29'	-2° 46'	-43° 95'	90+06	68+45	30+95	82+57	-1+677	
3211	56+91	-1° 51'	-45° 22'	-2° 52'	-43° 79'	90+03	68+38	30+96	82+57	-1+695	
3212	57+03	-2° 37'	-44° 66'	-2° 58'	-43° 62'	93+49	68+11	30+97	82+57	-1+712	
3213	58+98	1° 31'	-58° 60'	-3° 33'	-59° 78'	90+99	82+51	71+46	68+76	-2+92	
3214	63+45	1° 50'	-64° 41'	7° 05'	-64° 39'	92+19	83+11	70+80	86+16	-1+443	
3215	64+60	2° 01'	-65° 66'	2° 02'	-66° 70'	91+62	84+30	1+16	83+14		
3512-53	71+23	76° 27'	-71+50	91+31	81+38	7+17	87+93	-6+56			
4035	55+05	-1° 13'	76° 26'	-71+17	91+33	81+32	7+20				
4066	55+05	-1° 13'	76° 26'	-71+17	91+33	81+32	7+20				
4067	3507+56	-71+02	76° 45'	-70+83	91+34	81+06	7+25				
4068	3505+08	-70+91	76° 54'	-70+49	91+35	81+94	80+89	7+32	87+92	-7+04	
4069	2989+15	-42+62	86° 28'	-41+79	96+20	65+08	65+23	1+63	76+22	-1+04	
4010	2987+37	-41+88	86° 29'	-41+42	96+19	65+07	11+67	11+71	76+22	-1+119	
4011	2985+50	-41+74	86° 32'	-41+04	96+19	64+92	11+71	11+77	76+22	-1+133	
4312	2983+85	-41+41	86° 24'	-40+67	96+18	65+57	11+77	11+77	76+22	-11+48	

LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA
ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION / FRAME NO.		SPACECRAFT POSITION.		PRINCIPAL PT.		SUN		INCIDENT		EMISSION		PHASE	
		ALT	LONG	LAT	LONG	LONG	AZIMUTH	ANGLE	ANGLE	ANGLE	ANGLE	PHASE	ALPHA
4-012	2748-22	-14-02	89-22	-13-87	89-63	82-29	52-72	1-13	63-50	-0-78	-0-78	63-50	-0-78
4-014	2747-54	-14-27	85-22	-13-48	89-65	82-48	52-64	1-46	63-50	-0-87	-0-87	63-50	-0-87
4-015	2746-67	-13-11	85-02	-13-09	89-69	82-67	52-55	1-82	63-50	-0-96	-0-96	63-50	-0-96
4-016	2746-22	-12-56	85-25	-12-70	82-73	82-86	52-47	2-20	63-50	-1-04	-1-04	63-50	-1-04
4-017	2739-11	-12-89	81-45	-14-24	90-44	97-50	67-55	1-73	59-89	1-45	1-45	59-89	1-45
4-018	2739-70	14-34	81-4c	14-53	90-47	97-72	51-57	1-84	59-89	1-68	1-68	59-89	1-68
4-019	2742-32	14-15	91-47	15-03	92-56	97-95	51-59	2-05	59-89	1-70	1-70	59-89	1-70
4-020	2740-91	14-24	91-45	15-42	90-54	98-17	61-51	2-31	59-89	1-71	1-71	59-89	1-71
4-021	2739-22	45-88	91-35	42-97	98-82	117-80	62-96	4-94	57-34	-4-45	-4-45	57-34	-4-45
4-022	2980-55	42-02	94-56	43-34	98-91	118-04	53-08	5-62	67-34	-4-31	-4-31	67-34	-4-31
4-023	2982-72	42-11	94-6c	43-71	99-07	118-28	62-19	5-13	67-34	-4-19	-4-19	67-34	-4-19
4-024	2984-47	42-29	94-62	44-08	99-03	119-53	63-31	5-26	67-34	-4-08	-4-08	67-34	-4-08
4-025	6109-57	-7C-11	-52-54	-3-32	-73-12	267-60	133-65	1-28	114-77	1-68	1-68	114-77	1-68
4-026	2982-55	-41-56	75-66	-4-74	75-38	64-43	65-43	12-54	76-66	-1-34	-1-34	76-66	-1-34
4-027	2747-19	-14-35	82-59	-15-22	82-67	91-87	62-71	1-43	53-64	0-06	0-06	53-64	0-06
4-028	2739-56	12-56	84-87	13-34	81-88	95-36	63-78	4-78	59-25	4-51	4-51	59-25	4-51
4-029	2981-39	42-83	87-54	41-52	89-17	114-13	64-58	2-87	66-93	-2-34	-2-34	66-93	-2-34
4-030	3305-41	62-17	92-C	43-97	95-39	112-34	66-33	29-42	76-68	-1-57	-1-57	76-68	-1-57
4-032	3504-93	-71-24	63-C	-71-40	77-79	53-09	81-75	7-05	38-26	-6-55	-6-55	38-26	-6-55
4-033	2984-36	-42-02	73-C	-41-94	84-13	64-99	65-15	12-98	77-45	-12-32	-12-32	77-45	-12-32
4-034	2746-23	-14-41	75-57	-14-71	76-59	52-09	63-60	1-09	60-50	-0-91	-0-91	60-50	-0-91
4-035	2740-01	12-88	78-2C	13-63	76-71	96-71	62-89	2-81	69-55	2-30	2-30	69-55	2-30
4-036	2982-45	42-83	81-2C	41-65	85-89	116-13	64-58	2-87	66-93	-2-34	-2-34	66-93	-2-34
4-038	2981-59	-42-C2	66-45	-62-64	77-77	54-75	65-65	13-21	77-66	-12-12	-12-12	77-66	-12-12
4-039	2744-35	-14-29	65-26	-14-90	68-88	82-17	64-19	1-17	64-90	-0-71	-0-71	64-90	-0-71
4-041	2739-65	32-53	71-57	13-28	70-20	95-40	63-23	2-41	61-18	2-04	2-04	61-18	2-04
4-044	2983-50	42-65	74-64	41-26	80-11	116-70	62-37	6-88	69-25	-5-87	-5-87	69-25	-5-87
4-045	2442-71	71-50	84-15	70-09	84-08	130-13	76-47	2-27	77-65	-1-23	-1-23	77-65	-1-23
4-046	3457-53	-71-27	50-C6	-72-12	69-36	59-57	61-12	8-97	68-95	-7-56	-7-56	68-95	-7-56
4-048	2579-07	52-04	59-28	-62-64	71-80	64-71	65-46	13-91	78-25	-12-33	-12-33	78-25	-12-33
4-049	2742-36	-14-43	62-75	-14-81	63-41	82-31	64-52	1-23	65-46	-0-95	-0-95	65-46	-0-95
4-050	2738-48	13-BU	64-57	13-32	62-36	95-93	64-89	4-18	60-94	3-94	3-94	60-94	3-94
4-051	2983-35	42-84	67-55	-41-21	71-77	114-64	63-85	5-17	68-98	-5-14	-5-14	68-98	-5-14
4-052	6113-9C	0-18	-119-47	13-22	-112-19	277-31	123-43	15-83	1-48	9-56	9-56	1-48	9-56
4-053	6113-97	-C-37	-119-46	9-25	-112-14	276-36	123-63	14-95	114-82	9-59	9-59	114-82	9-59
4-054	6113-98	-C-19	-119-45	8-48	-112-11	275-19	123-73	14-93	114-82	9-61	9-61	114-82	9-61
4-055	2982-13	42-84	61-25	42-57	65-67	115-15	64-25	2-57	62-02	2-45	2-45	62-02	2-45
4-056	3454-66	71-63	71-0c	70-35	68-44	125-81	77-51	2-30	77-59	-0-19	-0-19	77-59	-0-19
4-058	3493-64	-42-06	53-23	-71-58	54-40	61-08	81-53	8-0	89-24	-7-52	-7-52	89-24	-7-52
4-059	2974-56	-42-11	46-75	-41-75	55-05	68-26	9-73	77-68	-9-42	-11-14	-11-14	77-68	-9-42
4-060	2737-75	-14-43	49-54	-13-58	49-79	83-55	66-65	1-83	65-64	1-01	1-01	65-64	1-01
4-061	2724-04	13-87	51-63	14-14	49-69	95-17	64-47	2-57	62-27	3-10	3-10	62-27	3-10
4-062	2975-36	42-81	54-52	42-57	59-1A	115-03	54-55	5-51	69-80	-5-25	-5-25	69-80	-5-25
4-064	2572-87	-42-14	40-27	-42-56	50-55	66-95	67-09	2-30	78-62	-12-20	-12-20	78-62	-12-20
4-065	2775-08	-18-44	42-55	-14-90	43-30	92-78	66-21	0-91	66-67	-3-47	-3-47	66-67	-3-47
4-066	2730-76	12-87	44-52	13-47	41-04	95-59	65-82	3-15	62-82	3-07	3-07	62-82	3-07
4-067	2575-58	42-81	47-25	41-04	51-64	113-64	65-27	4-77	70-03	-4-77	-4-77	70-03	-4-77
4-068	3487-77	71-63	57-12	70-93	54-66	124-40	78-51	1-05	77-78	0-72	0-72	77-78	0-72
4-070	3496-53	-71-55	24-55	-72-55	49-06	55-08	81-31	1-25	89-95	-0-72	-0-72	89-95	-0-72
4-071	2974-30	-42-22	33-74	-43-65	46-67	54-69	55-07	15-07	79-72	-13-44	-13-44	79-72	-13-44

LUNAR CRATER PHOTOGRAPHIC SUPPORTING DATA
ILLUMINATION PARAMETERS CENTERED BY MISSION AND FRAME NUMBER

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MISSION/
FRAME NO.

		SPACECRAFT POSITION	PRINCIPAL PT.	LAT	LON _G	SUN	INCIDENT	EMISSION	PHASE
				ALT	LAT	AZIMUTH	ANGLE	ANGLE	ANGLE
4072	2714.95	-14.57	-17.86	-15.77	17.86	82.16	65.87	3.15	-2.13
AC72	3276.54	32.88	32.53	12.53	37.59	95.43	65.27	2.41	0.93
4C74	2965.84	42.75	41.06	42.79	45.57	113.20	64.78	5.25	-6.16
4075	6125.75	0.36	-14.56	-4.29	-45.86	272.48	114.93	5.43	1.48
4575	2971.56	-42.23	27.23	-42.77	37.87	67.59	67.59	2.42	-11.53
4377	2723.56	-14.45	25.77	-13.92	31.15	83.02	67.38	7.35	7.03
4578	3751.09	13.86	31.66	13.21	21.22	95.43	66.36	2.51	2.22
4C79	2653.81	42.79	34.23	41.03	39.05	113.35	65.50	5.73	71.20
4C81	2471.67	71.89	43.34	7.45	45.19	128.92	76.95	2.53	-5.70
4C82	3502.54	-71.62	12.54	-72.37	32.47	59.38	81.08	9.43	79.31
4B83	2971.86	-42.23	25.71	-42.35	32.62	65.27	57.24	14.23	-8.41
4064	2716.81	-14.45	23.18	-15.19	24.28	82.82	66.88	60.18	-13.64
AC85	2715.81	12.88	25.64	12.59	23.94	95.24	66.48	2.12	67.60
4286	2976.11	42.83	27.61	41.52	31.25	111.67	66.34	5.23	64.88
4088	2652.24	-42.26	14.18	-42.70	24.94	57.75	68.34	12.53	-5.02
4189	2724.42	-14.45	16.85	-15.19	15.97	83.23	68.08	1.16	-1.76
4190	2711.25	71.89	16.46	13.75	15.97	95.02	58.43	4.03	-3.79
4C91	2917.25	-62.30	20.52	62.03	25.73	112.55	66.30	5.78	68.45
4092	3953.92	-71.70	25.48	71.15	32.23	127.43	77.79	1.73	-1.59
4.94	3514.92	-71.70	-6.67	-72.11	20.19	59.44	81.19	9.62	89.98
4095	2975.52	-42.27	7.64	-42.54	18.70	57.90	58.38	12.87	80.50
4C96	2722.26	-14.45	5.55	-15.16	15.67	83.22	68.20	1.60	-1.93
4097	2715.31	12.65	13.76	12.97	9.66	94.67	58.45	3.69	65.25
4C98	2917.53	4.2.81	14.21	40.97	18.53	111.26	66.64	5.89	72.44
4099	6112.22	0.41	-172.22	5.51	179.92	271.47	105.12	10.77	115.34
4100	2578.20	-42.25	1.45	-42.72	12.29	58.05	68.65	13.27	60.89
4101	2713.45	-14.45	3.38	-15.19	3.83	83.42	68.90	1.41	69.44
4102	2655.16	3.28	5.14	3.53	94.67	68.35	2.85	66.05	2.25
4103	2926.59	42.76	7.97	41.81	11.28	110.71	67.72	4.62	72.35
4104	3627.69	71.87	15.88	70.35	18.10	125.41	77.78	2.53	71.19
4105	3534.50	-71.77	-12.37	-70.16	9.46	57.96	60.85	9.89	-9.88
4107	2961.85	-42.26	-6.42	-62.41	5.45	57.93	68.35	13.27	-12.30
4108	2719.32	-14.45	-3.17	-16.26	-2.35	83.78	58.87	1.32	60.57
4109	2662.06	12.69	-1.46	2.48	4.89	94.69	59.47	3.35	66.16
4110	2515.84	42.77	5.85	42.55	3.35	109.58	59.24	2.93	72.10
4112	2686.04	-42.25	-12.55	-42.58	-1.35	69.16	69.58	12.53	-2.86
4116	2718.03	-14.45	-9.61	-14.64	-9.51	83.92	69.92	0.51	-11.84
4117	2687.23	12.89	8.09	13.06	-10.97	94.03	69.99	1.28	70.34
4118	2225.18	52.76	-5.70	42.27	-2.67	109.53	69.45	3.65	66.16
4119	3197.70	71.88	1.46	70.80	4.89	124.13	78.18	1.69	63.31
4116	3554.56	-71.67	-2.65	-72.45	-5.69	109.57	70.42	3.37	67.07
4120	2590.55	-42.26	-11.74	-42.75	-7.64	52.01	82.16	2.04	73.74
4114	2716.97	-14.45	-23.24	-14.45	-14.27	69.05	69.65	13.12	81.41
4121	2661.82	13.87	-14.65	13.81	-15.86	94.03	69.99	0.51	71.16
4122	2695.03	42.76	-12.27	42.77	-9.84	109.53	69.45	3.65	67.07
4115	6151.33	-71.27	11.26	11.13	16.23	124.13	78.18	1.69	63.31
4116	2594.47	-42.25	-2.65	-2.64	-2.64	271.07	112.45	2.04	71.07
4124	2716.97	-14.45	-23.24	-14.45	-14.27	49.78	70.10	13.18	92.36
4125	2677.25	12.51	-21.27	12.95	-15.94	94.15	71.12	0.82	71.17
4126	2660.38	6.89	-16.75	11.81	-14.59	94.02	70.48	3.35	67.78
4127	3259.22	71.89	-1.73	41.23	-14.57	109.57	69.24	5.93	74.12
4128	3574.83	-71.53	-6.64	-65.32	-25.65	122.39	78.35	3.62	63.31
4129	2599.02	-42.25	-22.17	-36.51	-23.37	63.34	81.31	12.02	91.50
4131						73.97	70.47	13.79	82.84

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LUNAR ORBITER PHOTOGRAPHIC SUPPORTING DATA

ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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PRINCIPAL PT.

MISSION/ FRAME NO.	SPACECRAFT POSITION	SUN AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	PHASE ANGLE
4132	2717.38 -14.42	-25.59	-9.14	-29.59	86.21
4133	2673.44 13.91	-27.66	18.73	-29.69	95.85
4134	2678.45 42.80	-25.30	46.31	-1.81	113.25
4136	2632.96 -42.16	-38.14	-42.65	-27.43	68.57
4137	2718.01 -14.40	-36.33	-14.98	-35.28	70.32
4138	2610.65 13.92	-34.43	13.70	-4.92	71.32
4139	2672.43 42.81	-31.75	42.16	-28.25	108.58
4140	3355.16 72.21	-22.53	71.05	-16.31	127.74
4142	3026.60 -42.14	-45.58	-42.04	-33.37	77.50
4143	2719.10 -14.41	-42.58	-14.30	-4.14	70.41
4144	2668.98 12.90	-41.01	14.03	-41.76	84.33
4145	2808.11 42.81	-36.27	42.33	-36.45	84.12
4146	6147.89 0.16	134.66	42.75	-33.70	109.41
4147	6148.74 0.00	13.67	2.09	136.09	271.70
4148	3035.38 -42.11	-52.21	-42.05	-41.38	271.45
4149	2720.27 -14.40	-49.64	-15.05	-4.97	71.55
4150	2668.38 12.61	-47.55	12.70	-4.92	84.42
4151	2865.88 42.84	-44.74	40.88	-0.20	108.28
4152	3344.90 72.22	-34.75	69.78	-29.61	126.33
4154	2613.43 -72.08	-65.24	-71.70	-33.51	52.20
4155	3011.09 -42.07	-59.07	-62.41	-6.98	72.05
4156	2721.54 -14.39	-56.29	-14.86	-55.00	84.73
4157	2668.78 12.91	-54.17	13.37	-56.27	93.42
4158	2665.52 42.85	-51.22	41.99	-47.66	107.65
4160	3012.07 -42.03	-65.60	-42.79	-54.52	72.28
4161	2722.05 -14.36	-62.54	-15.13	-61.98	84.56
4162	2669.91 12.93	-60.75	13.22	-62.17	93.41
4163	2865.05 42.87	-57.71	41.86	-51.38	107.65
4164	3345.72 12.26	-47.11	70.19	-4.50	126.89
4165	5486.51 33.56	112.70	38.84	-81.13	259.41
4166	3592.00 -71.19	-82.44	-71.31	-60.23	66.38
4167	3009.05 -41.82	-72.48	-42.01	-60.70	83.00
4168	2722.14 -14.14	-69.56	-14.45	-68.18	84.87
4169	2672.02 14.14	-67.33	13.37	-76.00	93.02
4170	2870.52 41.00	-64.22	41.77	-58.49	93.49
4171	5800.00 -34.03	110.74	-21.34	94.79	107.74
4172	3510.72 -41.58	-75.26	-42.94	-67.94	73.13
4173	2724.03 -14.37	-76.23	-42.01	-75.41	72.56
4174	2673.04 13.91	-73.55	13.37	-76.00	73.50
4175	2871.66 42.86	-75.79	41.29	-66.78	106.76
4176	3353.82 72.28	-59.77	41.77	-54.78	125.68
4177	5491.85 22.96	99.33	38.81	67.86	269.73
4178	5790.24 -33.98	104.14	-33.67	82.21	291.85
4179	3591.83 -71.28	-96.22	-69.52	-74.07	68.15
4180	3019.00 -42.00	-85.66	-40.83	-75.22	82.85
4181	2723.92 -14.40	-82.66	-13.99	-82.18	74.57
4182	2674.32 12.88	-80.57	15.26	-81.41	93.72
4183	2874.45 42.84	-77.35	43.03	-71.02	108.91
4184	5790.16 -34.03	97.12	-35.18	69.32	275.83
4185	5799.66 -24.05	97.52	-35.27	69.30	275.86
4186	3015.60 -41.96	-92.48	-42.27	-81.34	83.05
4187	2722.78 -14.36	-86.48	-14.57	-89.05	85.40
4188	2675.39 13.92	-87.15	13.38	-89.22	92.74

LUNAR CRATERS PHOTOGRAPHIC SUPPORTING DATA

ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	PHASE ANGLE	ALPHA
	ALT	LAT	LONG	LAT	LCNG	SUN					
4189	3377.75	42.88	-84.40	41.71	-79.99	136.12	71.63	5.11	76.76	+5.07	
4193	3373.20	72.45	36.34	-63.47	129.20	76.50	5.60	82.08	-5.58		
4191	5513.39	23.95	86.05	38.30	53.74	257.65	73.58	33.98	106.97	-33.40	
4192	5513.98	72.93	86.15	38.22	53.74	257.70	73.70	33.94	126.97	-13.38	
4193	3819.21	-66.87	-107.44	-63.89	-85.97	66.60	80.69	14.66	94.63	-13.77	
4194	3002.79	-42.01	-99.05	-42.97	-86.50	73.29	7.91	14.63	87.83	-13.97	
4195	2721.39	-14.40	-96.11	-14.91	-94.60	85.25	75.53	2.52	77.84	-2.31	
4196	2675.44	12.88	-92.82	12.86	-94.86	92.70	75.92	2.37	73.44	1.57	
4197	2819.33	42.64	-90.66	40.93	-85.66	105.17	71.39	6.70	77.63	-6.55	
4198	5701.45	-24.03	84.20	-29.05	56.71	275.29	62.13	30.64	111.87	-29.81	
4199	2740.97	-34.05	84.20	-29.14	56.70	275.31	62.13	30.62	111.87	-29.81	
4200	2718.95	-14.39	-102.71	-14.90	-131.72	85.52	76.51	7.73	78.02	-1.91	
4201	2614.74	12.53	-102.46	12.68	-102.35	92.55	76.41	3.06	73.42	3.01	
4202	5515.29	23.57	72.66	35.53	42.88	259.28	74.11	31.84	105.81	-31.72	
4203	5515.91	72.95	72.66	35.45	42.92	259.33	74.13	31.82	105.81	-31.70	
5035	2516.57	58.97	-81.16	59.69	-111.74	259.55	82.23	25.18	107.41	-25.18	
5037	2668.37	58.54	-81.15	59.63	-111.66	259.62	82.26	25.15	107.41	-25.15	
5037	2650.15	58.56	-81.14	59.56	-111.58	259.70	82.29	25.13	107.41	-25.12	
5008	2651.93	56.68	-81.17	59.49	-111.50	259.78	82.31	25.10	107.41	-25.10	
5009	2653.70	58.85	-81.12	59.43	-111.43	259.85	82.34	25.07	107.41	-25.07	
5010	2655.46	58.82	-81.11	59.37	-111.35	259.93	82.37	25.05	107.41	-25.04	
5011	2657.22	56.79	-81.19	59.30	-111.28	259.99	82.42	25.02	107.41	-25.02	
5012	2658.97	58.76	-81.09	59.24	-111.20	260.08	82.42	25.00	107.41	-24.99	
5013	3755.32	11.15	-74.61	14.32	-102.40	270.83	87.26	34.89	122.11	-34.85	
5014	3755.77	11.14	-74.61	14.27	-102.39	270.84	87.27	34.88	122.11	-34.84	
5015	5756.22	11.13	-74.61	14.23	-102.33	270.84	87.28	34.87	122.11	-34.83	
5015	5756.66	11.12	-74.60	14.18	-102.37	270.85	87.29	34.85	122.11	-34.82	
5017	3757.11	11.11	-74.60	14.13	-102.46	270.85	87.30	34.84	122.11	-34.81	
5016	3757.55	11.10	-74.60	14.09	-102.45	270.86	87.30	34.83	122.11	-34.80	
5019	3757.99	11.09	-74.60	14.04	-102.34	270.86	87.31	34.82	122.11	-34.79	
5020	3758.42	11.08	-74.60	14.00	-102.33	270.87	87.32	34.81	122.11	-34.78	
5021	3741.33	50.72	69.67	-85.19	-175.38	343.51	86.87	57.64	119.51	-34.34	
5022	5106.27	-25.63	-77.04	-26.54	-112.55	274.50	84.46	41.42	125.87	-41.40	
5024	5C08.71	24.01	-89.23	26.54	-120.17	267.82	82.34	36.78	119.12	-36.78	
5025	2651.47	58.75	-92.61	59.08	-129.77	258.80	81.66	25.31	126.96	-25.31	
5026	3669.05	-26.62	-90.65	-27.54	-125.06	274.41	84.79	39.98	124.76	-39.98	
5027	5672.85	-11.21	-96.65	-11.64	-91.64	264.93	119.93	50.00	31.36	50.00	
5028	5015.44	24.46	-103.16	26.39	-133.9	267.72	82.11	35.84	117.94	-35.84	
5029	2548.18	55.08	-117.56	59.12	-147.18	254.71	79.35	28.08	107.42	-28.07	
5030	5048.60	-25.33	-104.74	-25.79	-139.59	274.89	83.32	40.65	123.95	-40.63	
5031	1363.52	26.33	-113.59	27.92	-135.74	270.77	88.33	41.64	129.97	-41.64	
5032	1356.82	22.61	-116.73	24.81	-138.12	271.23	89.19	41.62	130.20	-41.62	
5033	145.32	-22.64	60.19	-25.97	63.64	79.10	71.69	5.88	75.20	-3.38	
5034	144.11	-25.26	60.22	-25.57	63.58	79.21	71.78	5.63	75.20	-3.48	
5035	142.93	-24.52	60.27	-25.16	60.52	79.32	71.67	5.40	75.20	-3.58	
5036	141.79	-24.56	60.20	-24.79	61.66	79.42	71.57	5.20	75.20	-3.68	
5037	124.63	-16.85	57.39	-18.95	57.14	81.50	70.83	3.88	67.08	3.74	
5038	103.38	-10.52	55.52	-0.95	49.44	88.21	73.88	65.76	8.25	65.76	
5039	1252.42	-37.14	60.60	-36.71	-159.46	263.63	79.61	50.85	130.66	-50.85	
5040	162.74	-30.94	50.67	-31.29	51.96	77.73	73.37	1.46	83.12	-9.84	
5041	103.27	-22.41	51.67	-2.06	46.97	87.84	72.85	58.42	15.53	56.22	
5042	102.33	-6.89	48.48	-0.99	44.10	88.16	72.43	55.31	17.12	55.30	
5043	1190.37	-44.89	-125.44	-47.53	-151.45	267.43	94.32	35.60	129.91	-35.59	

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MISSION/ FRAME NO.	SPACECRAFT POSITION				PRINCIPAL PT.				SUN				INCIDENT EMISSION				PHASE			
	ALT	LAT	LONG	LAT	LONG	AZIMUTH	ANGLE	ANGLE	SUN	INCIDENT	EMISSION	ANGLE	ANGLE	ANGLE	ANGLE	PHASE	ANGLE			
5044	102.07	-1.24	43.17	-1.25	42.69	87.95	4.98	63.80	4.98	63.80	4.98	63.80	4.98	63.80	4.98	63.80				
5045	102.00	-0.57	43.19	-0.97	42.92	86.07	4.95	63.80	4.95	63.80	4.95	63.80	4.95	63.80	4.95	63.80				
5046	101.94	-0.71	43.22	-0.70	42.98	88.17	6.71	4.93	63.80	4.93	63.80	4.93	63.80	4.93	63.80	4.93	63.80			
5047	101.88	-0.46	43.24	-0.43	42.95	88.28	6.88	4.94	63.80	4.94	63.80	4.94	63.80	4.94	63.80	4.94	63.80			
5048	101.80	-1.09	41.42	-1.26	42.98	87.89	6.07	26.36	93.18	6.07	26.36	93.18	6.07	26.36	93.18	6.07	26.36			
5049	101.83	-0.82	41.45	-0.97	43.00	88.01	6.04	26.36	93.18	6.04	26.36	93.18	6.04	26.36	93.18	6.04	26.36			
5050	101.77	-0.53	41.47	-0.67	43.03	88.14	6.07	26.35	93.18	6.07	26.35	93.18	6.07	26.35	93.18	6.07	26.35			
5051	101.72	+0.25	41.49	-0.38	43.05	88.27	6.27	26.35	93.18	6.27	26.35	93.18	6.27	26.35	93.18	6.27	26.35			
5052	100.67	2.95	40.00	2.91	35.59	89.39	72.74	55.99	16.75	55.99	16.75	55.99	16.75	55.99	16.75	55.99	16.75			
5053	1190.50	-146.99	4.85	-176.10	261.56	80.80	46.71	125.83	-45.27	80.80	46.71	125.83	80.80	46.71	125.83	80.80	46.71			
5054	132.77	-22.62	34.26	-27.74	27.72	82.80	79.52	65.53	33.65	82.80	79.52	65.53	82.80	79.52	65.53	82.80	79.52			
5055	100.14	2.19	34.67	2.21	34.19	89.29	69.28	6.82	60.47	89.29	69.28	6.82	60.47	89.29	6.82	60.47	89.29			
5056	100.48	2.45	34.69	2.48	34.21	89.39	69.26	8.81	60.47	89.39	69.26	8.81	60.47	89.39	8.81	60.47	89.39			
5057	100.23	2.71	34.71	2.75	34.23	89.50	69.23	8.81	60.47	89.50	69.23	8.81	60.47	89.50	8.81	60.47	89.50			
5058	100.28	2.56	34.73	3.03	34.25	89.60	69.21	8.82	60.47	89.60	69.21	8.82	60.47	89.60	8.82	60.47	89.60			
5059	100.02	2.32	32.53	2.17	34.30	89.33	67.54	23.94	91.33	89.33	67.54	23.94	91.33	89.33	67.54	23.94	91.33			
5060	100.06	2.10	32.55	2.47	34.33	89.46	67.52	23.93	91.33	89.46	67.52	23.93	91.33	89.46	67.52	23.93	91.33			
5061	100.42	2.88	32.58	2.76	34.35	89.58	67.49	23.93	91.33	89.58	67.49	23.93	91.33	89.58	67.49	23.93	91.33			
5062	100.18	3.16	33.00	3.06	34.38	89.70	67.46	23.93	91.33	89.70	67.46	23.93	91.33	89.70	67.46	23.93	91.33			
5063	99.44	-0.20	30.97	-0.37	32.48	88.28	67.48	30.95	98.22	88.28	67.48	30.95	98.22	88.28	67.48	30.95	98.22			
5064	98.37	0.78	29.30	0.72	25.01	88.71	73.56	55.41	18.15	88.71	73.56	55.41	18.15	88.71	55.41	18.15	88.71			
5065	1191.99	-44.71	-147.27	-48.87	-169.65	268.06	93.61	35.08	128.46	268.06	93.61	35.08	128.46	93.61	35.08	128.46	93.61			
5066	122.96	21.42	29.29	21.53	29.27	97.13	65.77	1.58	68.36	97.13	65.77	1.58	68.36	97.13	65.77	1.58	68.36			
5067	123.47	21.75	25.32	21.87	29.30	97.28	68.78	1.92	68.36	97.28	68.78	1.92	68.36	97.28	68.78	1.92	68.36			
5068	124.49	22.07	26.35	22.22	29.33	97.43	68.80	2.26	68.36	97.43	68.80	2.26	68.36	97.43	68.80	2.26	68.36			
5069	125.33	22.39	29.38	22.57	29.37	97.57	68.81	2.61	68.36	97.57	68.81	2.61	68.36	97.57	68.81	2.61	68.36			
5070	113.14	17.11	27.13	17.30	26.33	95.04	69.57	12.74	56.99	95.04	69.57	12.74	56.99	95.04	69.57	12.74	56.99			
5071	98.27	0.40	24.02	0.39	23.62	88.61	69.96	3.62	66.34	88.61	69.96	3.62	66.34	88.61	69.96	3.62	66.34			
5072	58.35	6.65	24.04	6.66	25.84	88.71	69.93	3.60	66.34	88.71	69.93	3.60	66.34	88.71	69.93	3.60	66.34			
5073	58.23	0.51	24.06	0.93	23.86	88.80	69.90	3.60	66.34	88.80	69.90	3.60	66.34	88.80	69.90	3.60	66.34			
5074	58.23	1.16	24.08	1.20	23.88	88.90	69.87	3.61	66.34	88.90	69.87	3.61	66.34	88.90	69.87	3.61	66.34			
5075	98.33	0.54	22.28	0.39	23.86	88.60	68.30	27.46	95.59	88.60	68.30	27.46	95.59	88.60	68.30	27.46	95.59			
5076	98.30	0.82	22.30	0.69	23.88	88.72	68.27	27.46	95.59	88.72	68.27	27.46	95.59	88.72	68.27	27.46	95.59			
5077	58.39	1.10	22.32	0.98	23.90	88.84	68.24	27.46	95.59	88.84	68.24	27.46	95.59	88.84	68.24	27.46	95.59			
5078	58.29	1.39	22.35	1.29	23.93	88.96	68.21	27.46	95.59	88.96	68.21	27.46	95.59	88.96	68.21	27.46	95.59			
5079	1244.88	37.73	-163.14	38.66	16.55	253.28	79.39	14.52	83.71	127.76	79.39	14.52	83.71	127.76	79.39	14.52	83.71			
5080	98.31	2.44	17.18	2.36	17.97	89.35	69.29	14.52	83.71	127.76	68.37	14.52	83.71	127.76	68.37	14.52	83.71			
5081	98.35	2.70	17.20	2.62	17.99	89.45	69.26	14.52	83.71	127.76	68.37	14.52	83.71	127.76	68.37	14.52	83.71			
5082	58.39	2.95	17.22	2.90	18.01	89.56	69.24	14.52	83.71	127.76	68.37	14.52	83.71	127.76	68.37	14.52	83.71			
5083	98.44	3.22	17.24	3.17	18.03	89.66	69.21	14.52	83.71	127.76	68.37	14.52	83.71	127.76	68.37	14.52	83.71			
5084	114.82	-14.82	14.02	-14.95	13.91	63.70	72.83	2.60	70.94	127.76	72.83	2.60	70.94	127.76	72.83	2.60	70.94			
5085	1239.43	37.81	-172.42	38.73	158.84	262.87	78.93	4.82	70.83	127.76	78.93	4.82	70.83	127.76	78.93	4.82	70.83			
5086	178.15	37.70	13.43	38.02	13.46	103.32	71.34	3.45	70.83	127.76	71.34	3.45	70.83	127.76	71.34	3.45	70.83			
5087	180.14	26.14	13.49	38.51	13.52	103.52	71.41	3.95	70.83	127.76	71.41	3.95	70.83	127.76	71.41	3.95	70.83			
5088	182.17	26.59	13.55	39.01	13.59	103.73	71.48	4.45	70.83	127.76	71.48	4.45	70.83	127.76	71.48	4.45	70.83			
5089	184.25	29.04	13.60	39.51	13.65	103.94	71.55	4.95	70.83	127.76	71.55	4.95	70.83	127.76	71.55	4.95	70.83			
5090	119.51	20.19	9.68	20.32	9.22	95.81	70.71	9.76	61.01	9.76	61.01	9.76	61.01	9.76	61.01	9.76	61.01			
5091	120.21	20.50	9.50	20.65	9.24	95.94	70.72	9.81	61.01	9.81	61.01	9.81	61.01	9.81	61.01	9.81	61.01			
5092	120.94	20.81	9.53	20.99	9.26	96.07	70.73	9.88	61.01	9.88	61.01	9.88	61.01	9.88	61.01	9.88	61.01			
5093	121.68	21.13	9.50	21.33	9.29	96.19	70.74	9.95	61.01	9.95	61.01	9.95	61.01	9.95	61.01	9.95	61.01			
5094	99.76	7.26	7.05	7.36	5.90	90.93	71.63	20.25	51.43	20.25	51.43	20.25	51.43	20.25	51.43	20.25	51.43			
5095	99.94	7.54	7.07	7.65	5.92	91.03	71.62	20.25	51.43	20.25	51.43	20.25	51.43	20.25	51.43	20.25	51.43			
5096	100.13	7.61	7.09	7.93	5.94	91.13	71.60	20.25	51.43	20.25	51.43	20.25	51.43	20.25	51.43	20.25	51.43			

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	ALT	LAT	LONG	LAT						
5097	100.33	6.08	7.11	8.22	5.95	91.23	71.59	20.28	51.43	20.14
5098	100.50	-4.97	4.32	-5.01	4.02	66.87	72.16	5.50	56.67	5.49
5099	100.49	-4.71	4.34	-4.73	4.04	66.95	72.12	5.45	66.67	5.45
5100	100.48	-4.45	4.36	-4.46	4.07	67.04	72.08	5.42	66.67	5.41
5101	59.59	-4.19	4.38	-4.18	4.09	67.13	72.05	6.40	66.67	5.38
5102	250.34	51.29	8.47	48.22	1.08	101.79	77.76	39.77	53.72	21.40
5103	123.54	31.85	17.875	38.72	150.81	262.91	78.98	47.26	126.24	-47.26
5104	127.44	22.46	3.18	23.50	2.82	98.95	70.98	4.87	66.11	4.87
5105	131.45	24.93	3.22	25.09	2.95	97.55	71.06	5.21	66.11	4.93
5106	135.44	26.30	3.45	26.57	3.08	98.12	71.14	5.91	66.11	5.00
5107	139.77	27.70	3.59	28.10	3.21	98.70	71.24	6.90	66.11	5.07
5108	57.46	-0.05	-0.52	-0.05	-1.13	68.48	72.21	10.73	61.48	10.73
5109	57.40	0.20	-0.50	0.22	-1.07	68.56	72.18	10.71	61.48	10.70
5110	57.35	0.46	-0.48	0.49	-1.05	68.65	72.15	10.70	61.48	10.67
5111	57.31	0.72	-0.46	0.76	-1.03	68.74	72.12	10.69	61.48	10.64
5112	57.37	-0.01	-2.27	-0.14	-1.11	68.43	70.61	20.94	91.35	-20.77
5113	57.51	0.26	-2.25	0.15	-1.09	68.53	70.58	20.93	91.35	-20.79
5114	57.46	0.54	-2.23	0.43	-1.07	68.63	70.55	20.93	91.35	-20.82
5115	57.41	0.81	-2.20	0.72	-0.72	68.73	70.52	20.93	91.35	-20.84
5116	115.22	-1.15	-5.14	-14.39	-6.95	93.95	73.01	15.49	87.62	-14.68
5117	114.62	-13.85	-6.11	-14.06	-6.13	84.04	72.95	15.43	87.63	-14.73
5118	114.04	-13.54	-5.09	-13.74	-6.11	86.14	72.90	15.38	87.63	-14.78
5119	113.49	-13.24	-5.06	-13.41	-6.09	84.23	72.85	15.34	87.63	-14.82
5120	106.09	12.41	-4.77	12.40	-4.01	92.93	70.39	12.73	83.08	-12.70
5121	106.45	12.69	-4.75	12.69	-4.05	93.04	70.37	12.72	83.08	-12.71
5122	106.43	12.97	-4.73	12.99	-3.99	93.16	70.36	12.75	83.06	-12.72
5123	107.21	13.26	-4.70	13.29	-3.93	93.27	70.35	12.79	83.08	-12.74
5124	1236.58	37.83	170.60	38.97	142.78	262.90	79.06	46.34	125.39	-46.33
5125	220.06	-42.21	-11.60	-42.90	-11.70	79.62	81.10	6.16	79.44	1.61
5126	217.25	-41.70	-11.52	-42.32	-11.61	79.65	80.93	5.57	79.44	1.45
5127	214.41	-41.75	-11.46	-41.72	-11.53	79.69	80.76	4.98	79.44	1.29
5128	211.56	-40.64	-11.26	-41.12	-11.44	79.72	80.59	4.37	79.44	1.12
5129	222.74	48.30	-4.15	48.68	-2.89	107.73	73.16	7.93	79.22	-6.13
5130	236.01	46.46	-4.09	49.31	-2.74	108.04	73.26	8.29	79.22	-6.05
5131	239.37	45.42	-3.95	49.96	-2.58	108.36	73.37	8.69	79.22	-5.96
5132	242.82	50.00	-2.88	50.62	-2.41	108.66	73.47	9.13	79.22	-5.88
5133	103.34	11.47	-10.57	-10.76	-10.76	92.21	72.16	11.68	60.32	11.88
5134	104.69	12.57	-9.58	12.66	-10.57	92.60	72.13	11.68	60.32	11.88
5135	106.25	13.72	-9.88	13.88	-10.58	93.02	72.13	12.01	60.32	11.80
5136	108.05	14.31	-9.78	15.15	-10.49	93.45	72.11	12.27	60.32	11.75
5137	99.50	5.50	-13.57	6.60	-14.75	90.54	72.84	14.18	58.78	14.05
5138	104.04	-7.40	-16.66	-7.48	-16.83	86.30	73.73	1.54	74.15	-0.47
5139	103.73	-7.13	-16.24	-7.19	-16.80	86.38	73.68	1.26	74.15	-0.51
5140	103.42	-6.85	-16.61	-6.90	-15.78	86.45	73.64	1.05	74.15	-0.55
5141	103.12	-6.58	-16.75	-6.61	-16.75	86.54	73.60	0.84	74.15	-0.59
5142	105.77	12.76	-16.54	12.67	-16.41	92.78	71.45	9.01	80.40	-8.95
5143	107.23	12.87	-16.65	13.85	-16.36	93.20	71.40	9.00	80.40	-8.99
5144	109.02	13.01	-16.75	15.06	-16.19	93.64	71.36	9.15	80.40	-9.04
5145	110.94	16.17	-16.65	16.30	-16.07	94.09	71.33	9.47	80.40	-9.09
5146	100.78	6.80	-19.20	6.43	-18.27	90.64	71.51	16.41	87.69	-16.38
5147	100.94	6.78	-19.18	6.73	-18.25	90.74	71.49	16.42	87.69	-16.40
5148	101.09	7.05	-19.15	7.01	-18.22	90.84	71.47	16.43	87.89	-16.42
5149	101.25	7.31	-19.13	7.28	-18.20	90.94	71.45	16.44	87.89	-16.44

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MISSION/ FRAME NO.	SPACECRAFT POSITION				PRINCIPAL PT.				PHASE			
	ALT	LAT	LONG	LAT	LNG	SUN AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	ANGLE	ANGLE	ANGLE	ALPHA
5150	102.91	9.25	-26.72	9.20	-20.41	91.48	72.08	5.50	77.52	-5.45	-5.45	
5151	103.15	6.32	-20.70	9.49	-20.39	91.58	72.06	5.49	77.53	-5.47	-5.47	
5152	103.40	5.80	-20.68	9.78	-20.36	91.68	72.04	5.49	77.53	-5.49	-5.49	
5153	103.66	10.07	-22.65	10.07	-20.34	91.78	72.03	5.50	77.53	-5.50	-5.50	
5154	102.53	10.35	-20.63	10.36	-20.31	91.87	72.01	5.54	77.53	-5.52	-5.52	
5155	104.21	10.62	-20.61	10.65	-20.29	91.90	72.00	5.58	77.53	-5.54	-5.54	
5156	104.49	10.89	-22.69	10.94	-20.26	92.07	72.00	5.64	77.53	-5.55	-5.55	
5157	104.79	11.16	-20.56	11.23	-20.24	92.17	71.97	5.72	77.53	-5.57	-5.57	
5158	1232.98	37.69	152.57	37.83	126.77	263.23	44.05	123.60	-44.04	-0.11	-0.11	
5159	155.03	31.62	-22.20	31.82	-22.16	99.41	72.06	2.49	72.86	-0.11	-0.11	
5160	156.45	32.01	-22.15	32.25	-22.11	99.47	72.79	2.91	72.86	-0.09	-0.09	
5161	157.95	32.42	-22.12	32.59	-22.06	99.64	72.83	3.36	72.86	-0.07	-0.07	
5162	159.53	22.24	-22.07	33.16	-22.01	99.81	72.95	3.82	72.86	-0.04	-0.04	
5163	1230.74	31.62	147.15	36.04	121.22	262.74	78.54	44.80	123.34	-4.80	-4.80	
5164	105.19	12.83	-31.55	12.56	-30.97	92.37	73.02	0.95	72.79	0.23	0.23	
5165	109.84	12.81	-31.53	12.86	-30.94	92.47	73.01	0.95	72.79	0.21	0.21	
5166	109.85	13.09	-31.50	13.16	-31.50	92.57	72.99	1.24	72.74	0.20	0.20	
5167	110.26	13.37	-31.48	13.46	-31.48	92.67	72.93	1.53	72.75	0.16	0.16	
5168	165.19	-20.30	-36.51	-30.54	-37.60	82.62	80.46	10.78	59.75	10.70	10.70	
5169	105.27	-2.94	33.63	-3.97	-36.30	87.47	75.21	8.34	66.87	8.33	8.33	
5170	105.06	-2.66	35.80	-3.68	-36.28	87.55	75.17	8.30	66.87	8.30	8.30	
5171	104.86	-2.38	35.78	-3.39	-36.25	87.62	75.13	8.20	66.87	8.26	8.26	
5172	104.66	-2.11	35.76	-3.10	-36.23	87.70	75.09	8.24	66.87	8.22	8.22	
5173	105.17	-2.70	37.56	-3.85	-36.89	87.79	75.03	8.24	66.87	8.22	8.22	
5174	104.56	-2.42	37.54	-3.55	-36.42	87.47	73.69	19.10	92.54	-18.84	-18.84	
5175	104.76	-2.13	37.51	-3.25	-35.40	87.55	73.65	19.07	92.54	-18.87	-18.87	
5176	104.57	-2.85	37.49	-2.95	-36.37	87.65	73.62	19.07	92.54	-18.90	-18.90	
5177	133.79	-16.69	-40.61	-19.03	-40.19	87.62	73.62	19.07	92.54	-18.93	-18.93	
5178	127.45	-17.36	-40.45	-17.60	-40.08	84.19	75.77	7.36	82.08	-5.11	-5.11	
5179	124.41	-16.07	-40.37	-16.21	-39.97	84.48	76.52	6.11	82.08	-5.34	-5.34	
5180	121.62	-14.60	-40.26	-14.84	-39.86	84.48	76.29	5.91	82.08	-5.57	-5.57	
5181	1181.29	41.61	134.27	41.85	109.39	261.61	78.65	41.94	120.58	-41.93	-41.93	
5182	167.45	24.67	-40.55	34.96	-41.50	99.31	74.56	6.07	68.98	5.56	5.56	
5183	169.14	25.09	-40.50	35.43	-41.45	99.47	74.59	6.30	68.98	5.59	5.59	
5184	170.85	25.51	-40.46	35.89	-41.40	99.62	74.63	6.55	68.98	5.62	5.62	
5185	172.57	25.93	-40.37	36.36	-41.35	99.78	74.67	6.83	68.98	5.65	5.65	
5186	136.76	25.67	-40.26	35.76	-41.34	95.38	73.85	1.23	73.51	0.34	0.34	
5187	137.76	26.02	-43.36	26.13	-43.70	95.50	73.86	1.45	73.51	0.34	0.34	
5188	128.77	26.37	-43.65	26.51	-43.66	96.63	73.87	1.96	73.51	0.35	0.35	
5189	139.80	26.72	-43.61	26.89	-43.62	96.76	73.87	2.34	73.51	0.35	0.35	
5190	140.86	27.07	-43.57	27.27	-43.58	96.89	73.88	2.72	73.51	0.35	0.35	
5191	141.94	27.42	-43.53	27.66	-43.54	97.02	73.89	3.11	73.51	0.36	0.36	
5192	143.03	27.78	-43.49	28.04	-43.49	97.15	73.90	3.49	73.51	0.36	0.36	
5193	144.15	28.14	-43.46	28.43	-43.45	97.29	73.91	3.88	73.51	0.36	0.36	
5194	127.39	21.55	-47.60	22.01	-47.52	95.06	73.99	1.41	74.95	-0.96	-0.96	
5195	128.17	22.27	-47.57	22.36	-47.49	95.18	73.99	1.69	74.95	-0.96	-0.96	
5196	128.96	22.60	-47.54	22.71	-47.54	95.29	73.99	1.99	74.95	-0.97	-0.97	
5197	129.78	22.92	-47.50	23.06	-47.42	95.41	73.99	2.39	74.95	-0.97	-0.97	
5198	130.61	23.25	-47.47	23.41	-47.38	95.52	73.99	2.63	74.95	-0.98	-0.98	
5199	131.45	23.53	-47.44	23.77	-47.44	95.64	73.99	2.97	74.95	-0.98	-0.98	
5200	132.32	23.51	-47.40	24.12	-47.30	95.76	73.99	3.31	74.95	-0.99	-0.99	
5201	133.20	24.24	-47.37	24.48	-47.27	95.88	73.99	3.65	74.95	-0.99	-0.99	
5202	134.44	24.64	-45.88	24.83	-49.54	95.88	74.62	6.47	68.50	6.11	6.11	

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ILLUMINATION PARAMETERS ORDERED BY MISSION AND FRAME NUMBER

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MISSION/ FRAME NO.	SPACECRAFT POSITION			PRINCIPAL PT.			SUN AZIMUTH	INCIDENT ANGLE	EMISSION ANGLE	PHASE ANGLE	ALPHA
	ALT	LAT	LONG	LAT	LONG	ANGLE					
5203	135.4	25.07	-49.46	25.22	-69.51	95.81	74.63	6.61	68.50	6.11	
5204	136.45	25.36	-49.40	25.01	-69.47	95.93	74.52	6.77	68.50	6.11	
5205	137.45	25.71	-48.55	25.99	-69.44	96.05	74.64	6.95	68.57	6.12	
5206	141.69	27.20	-52.35	27.40	-52.78	96.38	74.89	6.37	68.88	6.09	
5207	142.87	27.51	-52.28	27.75	-52.75	96.49	74.90	6.50	68.88	6.30	
5208	143.97	27.87	-52.32	28.14	-52.71	96.51	74.91	6.65	68.88	6.01	
5209	145.21	28.26	-52.17	28.56	-52.67	96.75	74.92	6.86	68.88	5.02	
5210	143.53	12.61	-56.45	12.67	-56.11	91.84	75.49	10.19	65.32	10.17	
5211	110.85	12.89	-55.44	12.57	-56.09	91.92	75.47	10.20	65.32	10.15	
5212	111.27	13.18	-55.43	13.28	-55.35	92.01	75.46	10.22	65.32	10.13	
5213	111.57	12.47	-55.41	13.59	-55.04	92.09	75.44	10.24	65.32	10.15	
5214	112.07	12.76	-55.38	13.90	-56.01	92.18	75.43	10.23	65.32	10.10	
5215	112.49	14.36	-55.26	14.21	-55.99	92.27	75.42	10.33	65.32	10.09	
5216	112.92	14.35	-55.13	14.53	-55.96	92.36	75.40	10.38	65.32	10.07	
5217	113.36	14.65	-55.10	14.84	-55.94	92.45	75.39	10.45	65.32	10.05	